DOCUMENT RESUME

ED 428 761 IR 057 302

AUTHOR	Barrett, G. Jaia, Ed.
TITLE	ARL: A Bimonthly Newsletter of Research Library Issues and Actions, 1998.
INSTITUTION	Association of Research Libraries, Washington, DC.
ISSN	ISSN-1050-6098
PUB DATE	1998-00-00
NOTE	106p.; For the 1997 issues, see ED 416 902.
AVAILABLE FROM	Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036 (members $25/year for additional subscription; nonmembers $40/year).
PUB TYPE	Collected Works - Serials (022)
JOURNAL CIT	ARL; n196-201 Feb 1998-Dec 1998
EDRS PRICE	MF01/PC05 Plus Postage.
DESCRIPTORS	Academic Libraries; Competition; Copyrights; Document Delivery; Electronic Journals; Electronic Text; Higher Education; Information Industry; Information Policy; *Information Services; Interlibrary Loans; Measurement Techniques; Newsletters; *Research Libraries; Scholarly Journals
IDENTIFIERS	*Association of Research Libraries; Digitizing; Library of Congress; License Agreements; Performance Levels

ABSTRACT

This document consists of six issues of the ARL (Association of Research Libraries) Newsletter, covering the year 1998. Each issue of the newsletter includes some or all of the following sections: "Current Issues," reports from the Coalition for Networked Information and the Office of Scholarly Communication, Office of Leadership and Management Services (formerly the Office of Management Services), and Coalition for Networked Information, "Preservation," "Federal Relations," "Statistics and Measurement," "Diversity," "ARL Activities," and calendar of events. One special issue on measures (April 1998) focuses on the issues and activities in the area of performance measurement in research libraries. The second special issue on journals (October 1998) discusses views of the current marketplace for scholarly journals, including what publisher profits reveal about competition in scholarly publishing, value and estimated revenue of scientific/technical journals, and non-commercial alternatives to scholarly communication. Topics of other issues include the Scholarly Publishing & Academic Resources Coalition (SPARC); the Dublin Core Metadata Program; E-information policies; an update on Uniform Commercial Code Article 2B; high-performing interlibrary loan/document delivery operations; library director evaluation; salaries in research libraries; university funding for research libraries; collaboration on reduced-cost journals; the Library of Congress mass deacidification program; the Digital Millennium Copyright Act; access management for networked information; and electronic theses and dissertations. (AEF)

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ED 428 761

ARL: A Bimonthly Newsletter of Research Library Issues and Actions
Nos. 196-201
February-December 1998

G. Jaia Barrett
Editor

IR057302

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SPARC

A BIMONTHLY NEWSLETTER OF RESEARCH LIBRARY ISSUES AND ACTIONS

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Current Issues

ARL Promotes Competition through SPARC: The Scholarly Publishing & Academic Resources Coalition

by Mary M. Case, Director, ARL Office of Scholarly Communication

The system of scholarly publishing is a complex process that is centered on the intellectual property of the faculty author. Until recently, it was routine for faculty in the process of publishing to transfer the copyright of this property to a publisher. The intellectual property and the attendant rights form the economic basis of a publisher's investment. For many generations, this system, dominated primarily by scholarly societies and university presses, appeared to serve authors, publishers, and the education and research community well. During the 1960s, however, these traditional outlets could not expand fast enough to provide the increased capacity for publishing generated by a system of higher education that was rapidly expanding. Commercial publishers stepped in to fill the need. Some of these publishers discovered that journal publishing, especially in science, technology, and medicine, could be very lucrative. A few have exploited the market and are doing everything they can to ensure future profits through aggressive pricing strategies, publisher consolidation, and influencing legislation to ensure greater intellectual property protection.

One key strategy in counteracting these trends toward higher prices is to provide additional prestigious and cost-based outlets for the best faculty work. To this end, ARL recently approved the development of a project called SPARC—Scholarly Publishing & Academic Resources Coalition—a project that seeks to encourage the development of competition in the scholarly publishing marketplace.

SPARC is conceived as a partnership project of ARL and other educational and research organizations. Its mission is to be a catalyst:

- To create a more competitive marketplace for research information by providing opportunities for new publishing ventures, endorsing new publications and information products, and recruiting authors, editors, and advisory board members.
- To promote academic values of access to information for research and teaching, the continuation of fair use and other library and educational uses in an electronic information environment, and the ethical use of scholarly information.
- To encourage innovative uses of technology to improve scholarly communication by collaborating in the design and testing of new products; advancing new publishing models as appropriate applications of electronic networks, such as Internet2; and developing systems and standards for the archiving and management of research findings.

Marketplace Trends

Most faculty and librarians are now very familiar with the annual cycle of serials cancellations in academic and research libraries. What has also become clear is that the cancellation projects are not one-time adjustments to local circumstances, but manifestations of a marketplace that is pricing some resources beyond the reach of the educational community. Over the past decade, ARL statistics show that research library expenditures for serials have increased almost 10% a year and

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that the unit cost of a serial title has increased by 147%. Since 1986, while ARL libraries have canceled hundreds of thousands of dollars worth of journals, they have spent 124% more on serials to purchase 7% fewer titles. During the same period, expenditures on monographs have increased 29% and ARL libraries have purchased 21% fewer titles.

While some price increases can be justified by the increase in numbers of pages and articles included within a volume to accommodate the increased output of faculty, there is evidence to suggest that some commercial publishers charge prices that significantly exceed the costs of production. In 1989, Economic Consulting Services, Inc. (ECS) concluded an analysis for ARL of the trends in average subscription prices and publication costs over time. The analysis focused on over 100 titles published by four major publishers in the U.S. and Europe. The result of the ECS report found that from 1973-1987, publisher profits increased between 40% and 137%. The results also indicate that the cost increases faced by these publishers did not fully justify the price increases paid by research libraries.

One of the most profitable scholarly publishers is Reed Elsevier, one of the world's largest publishing and information companies, located in the United Kingdom. Its 1996 Combined Profit and Loss Statement (which is included on its website <http://www.reed-elsevier.com/combstat.html>) reports a gross profit of £2,082 million (about $3.5 billion) on sales of almost £3,400 million ($5.7 billion). The net operating expenses are £1,248 million (or $2.1 billion). This appears to be a fairly substantial margin (£834 million or $1.4 billion). After taxes, £604 million (or approximately $1 billion) is left to pay out dividends to shareholders (£348 million) and to transfer funds to reserve (£256 million). The statement at the bottom of the report notes: "The historical cost profits and losses are not materially different from the results disclosed above."

Elsevier Science, an international publisher of scientific information headquartered in the Netherlands, is one of the several publishing companies owned by Reed Elsevier. Preliminary analysis of figures recently gathered by ARL shows that, on average, an ARL library spends almost $628,000 dollars a year with Elsevier Science to obtain 378 titles. That is 3.5% of the serials titles subscribed to by a library but almost 21% of the annual serials expenditures. Extrapolating from these averages, the 121 ARL libraries spend over $75 million a year on Elsevier Science titles. This is a significant portion of U.S. and Canadian research library materials budgets going to one company.

To illustrate, Elsevier Science publishes some of the most expensive serials subscribed to by research libraries. The accompanying table provides a sample of these journal titles and the increases in their subscription prices between 1995 and 1998. The increases range from a total of 43.5% (or roughly 14.5% a year) to 65.8% (or 22% a year).

SAMPLES OF SUBSCRIPTION PRICE INCREASES

	1995	1996	Change 95 to 96	1997	Change 96 to 97	1998	Change 97 to 98	Change 95 to 98
Brain Research	$10,181	$12,234	20.2%	$14,919	21.9%	$15,428	3.4%	**51.5%**
Biochim. Biophys. Acta	$7,555	$8,837	17.0%	$10,528	19.1%	$10,839	3.0%	**43.5%**
Chem. Phys. Letters	$5,279	$6,569	24.4%	$7,818	19.0%	$8,060	3.1%	**52.7%**
Eur. Jrnl. of Pharmacology	$4,576	$5,680	24.1%	$6,431	13.2%	$6,702	4.2%	**46.5%**
Gene	$3,924	$5,069	29.2%	$6,144	21.2%	$6,433	4.7%	**63.9%**
Inorganica Chim. Acta	$3,611	$4,476	24.0%	$5,283	18.0%	$5,540	4.9%	**53.4%**
Intl. Jrnl. of Pharmaceutics	$3,006	$3,915	30.2%	$4,691	19.8%	$4,983	6.2%	**65.8%**
Neuroscience	$3,487	$4,001	14.7%	$4,543	13.5%	$5,073	11.7%	**45.5%**
Theoretical Computer Science	$2,774	$3,425	23.5%	$3,835	12.0%	$4,059	5.8%	**46.3%**
Jrnl. of Exp. Marine Bio. & Eco.	$1,947	$2,445	25.6%	$2,811	15.0%	$2,931	4.3%	**50.5%**
Solid State Communications	$1,945	$2,327	19.6%	$2,602	11.8%	$2,871	10.3%	**47.6%**

Note: The actual subscription price paid by an individual library may vary. The prices above for 1995-1997 reflect actual experience in two ARL member libraries; 1998 prices are taken from the Elsevier Science website.

Maximizing the Market Through Consolidation

There is also anecdotal evidence that another trend in the publishing industry may be affecting the price of library materials: the consolidation of publishers of core products. Reed and Elsevier merged in 1993 and have since pursued an aggressive corporate strategy of acquisitions and mergers. Reed Elsevier now owns publishing companies throughout Europe and North America, including Bowker/Saur, Butterworth's, Shepard's, Lexis-Nexis, and the Congressional Information Service, to name a few. Its corporate global strategy, as stated on its website, is to concentrate on "must have" information and to continue development through "organic growth and acquisition." This includes not only buying other companies, but also buying or contracting to publish society and association journals.

In October 1997, Reed Elsevier announced a plan to merge with Wolters Kluwer, which itself owns Lippincott/Raven and a number of other European companies. A new company, Elsevier Wolters Kluwer, would, according to *The New York Times* (29 December, 1997), "create the world's largest publisher of professional and trade journals, with estimated combined 1997 revenues of $8 billion...." Regulatory agencies in both Europe and the United States are concerned about and are investigating this proposed merger. But that has not stopped additional acquisitions. In December 1997, Elsevier Science released a statement that it was in negotiation with the Beilstein Institute, a non-profit German organization, to obtain an exclusive commercial license to the *Beilstein Database and Handbook*, the standard reference work for organic chemistry. In late January 1998, Engineering Information, Inc. notified its customers that it was selling virtually all of its assets, including its name, to the newly created Elsevier Engineering Information, Inc., a wholly-owned subsidiary of Elsevier Science.

Publisher consolidation is also underway in the fields of law and business, where the Thomson Corporation of Canada has moved aggressively to acquire other publishers. Thomson owns the Institute for Scientific Information, Gale Research, West, and Warren Gorham Lamont. When Thomson purchased West Publishing in 1996, it was required by regulatory agencies to sell off a number of its law journals. These titles were purchased by Lexis-Nexis, owned by Reed Elsevier. In another switch among the giants, Thomson announced in December that it had agreed to sell its Thomson Science subsidiary to Wolters Kluwer. (Data from the Thomson website shows that the specialized information/publishing companies within Thomson made $747 million, or 19% operating profit, before amortization in 1996; see <http://www.thomcorp.com/press/858133513.html>.)

As might be anticipated with the recent takeover of Lexis-Nexis by Reed Elsevier, pricing and access options are changing. As of September, one ARL member library estimated that it would have to pay 3.5 times the current cost for the new Lexis-Nexis educational service, which includes less access than its previous subscription. The library would now pay a total of $87,000 a year versus the current price of $25,200. An example of the impact on the pricing of an individual title taken over by Elsevier in 1997 is the subscription price for the *Journal of Supercritical Fluids*. The journal was published by Polymer Research Associates and cost $275 for a yearly subscription. A subscription for 1998 costs $657.

Faced with rising prices that show no sign of moderating, libraries have undertaken a number of strategies to try to manage their budgets and increase their buying power. These include journal cancellations, with reliance on document delivery and cooperative collection development for low use materials, and consortial licensing of electronic resources. These generally local strategies, however, have had limited effectiveness in moderating prices and have had no impact on the growing concentration of the publishing industry. Cancellations only result in increased prices for the rest of the subscribing community, exacerbating the already high prices.

Expanding Product Control Through Legislation

But higher prices are not the only concern arising from the increased concentration of publishing in the hands of a few large commercial companies. There is also the issue of how much exclusive control the copyright holder may assert over access to and use of copyrighted information. The last year has seen accelerated effort on the part of many stakeholders in the scholarly communication process, including libraries, to ensure continuation of balanced copyright law in a digital and networked environment. However, the same commercial publishers that have successfully pursued a profit-maximization strategy in the print environment are aggressively advocating legislation that would strengthen the copyright owner's monopoly and control over intellectual property. Some of the legislative proposals being promoted would transform current copyright law into a dramatically more restrictive instrument, narrowing or eliminating fair use and other provisions that provide for educational use of copyrighted materials.

As an example, access to information for research and education could be significantly restricted under H.R. 2652, The Collections of Information Antipiracy Act, a bill introduced into the U.S. House of Representatives in October 1997. Reed Elsevier and Thomson are major proponents of the bill, which would amend the Copyright Act to "protect databases from

misappropriation." While it is not unreasonable for publishers to want to protect their products, there is no convincing evidence, especially in light of the publishers' profitable track records, that data is being "misappropriated" on a scale that justifies this legislative action. The legislation as written is extremely broad, covering everything from facts to journal articles, and the exemptions for educational, scientific, or research uses are too narrow to be useful. C. Judson King, Provost and Senior Vice President of Academic Affairs, University of California system, believes that "H.R. 2652 would impede the free exchange of information and ideas that is the engine of the academic enterprise, thereby slowing the dissemination and creation of new knowledge" (letter to The Honorable Howard Berman, 29 October, 1997). Not only are Reed Elsevier and Thomson intent on maximizing their profits through pricing and consolidation, they are actively pursing legislative agendas to ensure long-term protection of their revenue streams, but at the expense of education and the public good.

The key criterion that is critical to the success of these partnerships is shared values.

The conditions of the scientific and scholarly publishing marketplace make it impossible for higher education to sustain library budgets on a scale sufficient to keep up with increasing prices and the level of output. At the same time, access to and use of digital information resources could be restricted by legislative attempts to expand the copyright holders' control over access to intellectual property. The need for alternative publishing outlets—"new entrants," "greater competition," and "alternative models"—particularly in the serials marketplace, has become increasingly obvious and increasingly urgent.

Why SPARC and Why Now?

Increased competition was identified as a key strategy for addressing rising prices for serials ten years ago, but change has been slow in coming. A number of critical factors, however, have now converged to make the transformation of the scholarly communication system possible:

- Alternative models of scholarly communication are now economically and technologically feasible. The rise of the Internet and World Wide Web have made it possible for anyone to publish.
- Capable partners are ready to join with research institutions to create new publishing alternatives.
- Libraries and universities are prepared to redirect budget resources to support new forms of scholarly publishing. This was confirmed at a recent meeting of academic administrators who indicated their willingness to devote resources to address the problems in scholarly communication. Academic administrators have come to realize that the strategies that libraries can pursue on their own cannot adequately address the fundamental problems in the current system of scholarly communication. Collective effort by the community is required.
- Faculty and academic administrators will support initiatives that offer realistic alternatives for disseminating research findings and scholarship.

On June 30, 1997, representatives from 45 ARL institutions met to discuss a proposal to create an electronic publishing fund and to seek publishing partners interested in entering the serials market in areas in which prices are highest and there is the greatest need for alternative models of research communication. The meeting resulted in the formation of a small working group of library directors who volunteered to work with ARL staff in developing an action plan.

The Working Group identified potential partners—organizations that may be interested in forming partnership relationships with libraries and educational institutions. These include:

- Professional societies and university presses interested in launching new publishing initiatives.
- Start-up electronic publishers that have already created publications in subject fields dominated by commercial publishers.
- For-profit enterprises that offer new strategies for controlling costs and improving access to research information.
- "Visionary" enterprises, including both discipline and institution-based server models, seeking to create entirely new economic models for scholarly communication.

The partnerships forged by SPARC will depend on the readiness of potential partners to achieve the goals of the coalition in terms of content and infrastructure. In addition, potential partners will be evaluated on whether: they share the values of the scholarly and academic community, they have credibility in the scholarly marketplace, their leadership is committed to the goals of SPARC, they have publishing experience, and they are willing to commit resources.

The key criterion that is critical to the success of these partnerships is shared values. The values proposed for SPARC partners include support for:

- Fostering a competitive market for scholarly publishing by encouraging new participants in the publishing

field that are committed to principles of cost-based pricing.
- Implementing policies for intellectual property management emphasizing broad and easy distribution and reuse of material and the ethical use of scholarly resources.
- Encouraging innovative applications of available information technology to enrich and expand research and scholarship and the available means for distribution.
- Assuring that new channels of scholarly communication sustain quality requirements and contribute to promotion and tenure processes.
- Enabling the permanent archiving of research publications and scholarly communication, including those published in digital formats.

Last October, the ARL Board gave the go-ahead to the Office of Scholarly Communication to develop a plan to make the SPARC concept a reality. An ad hoc Working Group guiding the next phase of SPARC's development will propose a membership strategy that invites the participation of other library, educational, and research organizations in SPARC. The Working Group is also charged with the responsibility to develop a business plan and action agenda to support at least five alternative publishing ventures by the end of 1998. The first major action of the Working Group this year was to invite ARL libraries to become Founding Members of SPARC. At press time, almost 50 ARL libraries had responded. Next on the Working Group's agenda will be hiring a SPARC project manager.

ARL recognizes that SPARC is only one of a number of strategies that must be undertaken simultaneously to ensure long-term access to scholarly research. Other strategies include working aggressively in the legislative arena to ensure fair use and other educational and library uses of copyrighted works in the digital environment; investigating options for faculty and the university to retain and better manage intellectual property rights; and the decoupling of the academic credentialing process from formal publication. None of these strategies will work without the support and involvement of faculty, academic administrators, and the research and scholarly community. With these constituencies, ARL will pursue SPARC as one effort to build the partnerships necessary to create a future for scholarly communication that is robust, innovative, and affordable.

Thanks to Carson Holloway for gathering information on corporate ownership included in this article. More information about SPARC can be found at <http://www.arl.org/sparc/>.

The Dublin Core Descriptive Metadata Program: Strategic Implications for Libraries and Networked Information Access

by Clifford Lynch, Executive Director, Coalition for Networked Information

This article explores the potential applications of the Dublin Core descriptive metadata program for libraries, museums, and other networked information providers. It includes a brief summary of the current thinking that has emerged from the Dublin Core initiative, including the broader metadata framework captured by the Warwick Framework, and also some consideration of the relationship with the Resource Description Framework under development by the World Wide Web Consortium, but the central focus is on applications scenarios for Dublin Core metadata. The approach here is strategic rather than technical; readers interested in the precise definitions of the individual Dublin Core data elements will need to consult the actual Dublin Core documents or other articles. My hope is that it will be helpful to library administrators and technology managers who are trying to understand and evaluate the implications of the Dublin Core both for access to existing resources and for practices of description that will be used to create, maintain and provide access to new resources.

Metadata

Metadata is literally "data about data," information that qualifies other information. Bibliographic description is a form of metadata, so also is information about intellectual property rights and terms of use, formats of electronic information, reviews, errata, abstracts and summaries, provenance information, and a host of other data. Some metadata can be derived mechanically from objects; other metadata has independent standing as intellectual creation in its own right. It should be clear that the set of metadata associated with an information object is unbounded. The division between data and metadata is somewhat arbitrary and highly situational; information will be used as data in one setting and metadata in another.

At least in my view, discussions of metadata independent of context and purpose are of little interest; it is most productive to speak of various kinds of metadata in conjunction with the processes that they are intended to support or facilitate. There are certainly types of metadata that have been developed for various specific purposes and which it is now proving possible to repurpose, particularly in the digital environment—indeed, creative repurposing and reuse of metadata is emerging as a key idea in the development of sophisticated information organization, retrieval, and management systems. But

the point is that metadata is created and takes on importance through its ability to support activities; for example, the point is not to describe but to support discovery and other processes.

For a more extended discussion of the nature of metadata and its interactions with the processes of the discovery and retrieval of networked information, readers might consult the draft CNI white paper on the topic <http://www.cni.org/projects/nidr/>.

The Warwick Framework

While the Warwick Framework (named after the meeting in Warwick, England where it was developed) actually postdates the beginning of work on the Dublin Core (DC) described later, it is useful to discuss it first because it provides a broad framework in which to define sets of metadata.

The basic motivation for the work on the Dublin Core was to develop a set of simple data elements that could be used to describe document-like networked information objects in support of discovery (searching) activities. It rapidly became clear that there were any number of legitimate, important requirements for types of metadata that went beyond the scope of the Dublin Core; the problem was that because the Dublin Core was an active effort, and also because it was not clear how to use the DC in conjunction with other sets of metadata, there was considerable pressure to extend the scope of the actual DC effort almost without boundaries. This threatened the effectiveness of the Dublin Core program. To address this problem, an architecture called the Warwick Framework was developed that described how various sets of metadata for different purposes might be defined and maintained by appropriate communities of expertise. Collections of data elements from these diverse sets of metadata would be assembled into "packages" (one package per metadata set). The framework describes container structures whereby a digital object and a collection of such packages can be linked together. Each package is independent of all of the others, and software systems that understand specific metadata sets can extract packages that are based on those sets and examine them, bypassing other packages based on unfamiliar sets. Individual packages can even be encrypted independently. Containers can also refer to remote packages stored independently on the network, and are recursive: a container can include other containers, allowing for the construction of complex composite objects.

In designing the Warwick Framework, there was a recognition that division of the universe of metadata into packages would be imperfect; there would be some overlap between packages, and the content of one package might, in some cases, be derived computationally from another. There are also a number of research questions about how relationships among packages are expressed.

The importance of the Warwick Framework is twofold. First, it provides a broad architectural framework for defining and using metadata of various types. Second, it allows developers of metadata sets that have specific purposes to limit and focus their work by appealing to the Warwick Framework as an overarching context within which other groups interested in metadata can independently make progress on their own needs.

More information on the Warwick Framework can be found in the article by Carl Lagoze in the July 1996 issue of *D-Lib Magazine* <http://www.dlib.org/dlib/july96/lagoze/07lagoze.html> and the references there.

The Dublin Core

The Dublin Core is a set of fifteen data elements—each of which is both optional and repeatable—that was designed to be used as metadata to describe a broad class of information objects. The description applied to objects through the Dublin Core data elements is not intended to be comprehensive or exhaustive; it does not seek to capture everything that can be asserted about an object. In particular, the DC is designed to support discovery of information objects of interest using search tools and systems; it is not designed to provide comprehensive support for access, management, use, or assessment of networked information (though some of the metadata to support discovery is also important in these contexts). To give just one example of this distinction, the Dublin Core includes a data element for terms and conditions. This is provided primarily because some limited information on terms and conditions of use—for example, that an object is not copyrighted, or that it can be used without restriction in educational settings—is actually important in finding objects of interest. There is work underway to develop very complex codings to express terms and conditions that might be used in conjunction with electronic rights management systems; this data would be essential for use and management applications, but is probably too detailed and specialized to be of much use in the discovery process, particularly given the current immature state of both standards and conceptual understanding in rights management specifications. The Dublin Core is not intended to carry this kind of very specific functional rights management terms and conditions metadata.

The DC was developed to describe what have been called, for want of a better term, *document-like objects*. These have the characteristics of being relatively fixed, although they need not be textual (images or sound recordings are easily within scope). They may have internal sub-structure—for example, an object with component objects—but the main focus of the DC to date has been to describe objects as opposed to *collections* of objects. The primary concern has been to ensure that the

DC is serviceable for a rather broad range of common information objects—for example, a workshop was held with the specific focus and outcome of extending and validating the DC as a means of describing a large class of visual resources—rather than drawing precise boundaries for what is out of scope.

The DC clearly *can* be usefully applied to collections or to very complex dynamic objects or information services, but it probably does not do a completely adequate job of describing such objects and services to support discovery.

The development of the DC has had a very strong theme of codifying practice rather than research: methods for satisfactorily describing these complex new classes of dynamic digital objects and network services is still, at least in my view, a research problem. Further, while there is a great deal of consistency across the class of document-like objects that were the objective of the DC, there seems to be tremendous variation in the kinds of description needed for the still evolving menagerie of new digital resources. And, at least today, there are a lot more document-like objects than anything else on the network; they are the rule rather than the exception.

Data Elements

The fifteen Dublin Core data elements are: title; creator (author); subject and keywords; description; publisher; other contributer; date; resource type; format; resource identifier; source; language; relation; coverage; and rights management.

It should be clear from an inspection of this list that the DC is designed to serve as a sort of lowest common denominator form of description. It does not, at least directly, accommodate discipline-specialized description; indeed, some of the data elements, such as "date" are so vague that they are of limited utility without some further scoping. The DC was designed so that data element values for an object could reasonably be defined by its author, or by a site manager, rather than by a trained specialist cataloger or indexer. DC relies very heavily on natural language, and retrieval systems for the DC will have to rely heavily on heuristics and language parsing; not only does the basic DC framework ignore specialized thesauri and subject classification, for example, but it does not even make assumptions about the format that would be used to list dates or personal names.

Qualifiers

One of the ongoing tensions and controversies in the development of the DC has been its lack of precision. The most basic version of the DC—called the *Unqualified* Dublin Core—doesn't carry any information about the format of the data element values, their source or context, or the specifics of their semantics beyond the very broad definitions of the basic data elements. To address this need various qualifiers have been proposed to serve such functions as indicating the language or syntax in which the data element values are expressed, or to constrain the semantics of the data elements (for example, indicating that a date is a date of creation, or that a creator is a corporate author, or that a topic value is taken from a specific thesaurus). Obviously, use of qualifiers will tend to reduce interoperability, because participating systems will need to understand much more than just the fifteen basic data elements in order to interpret the semantics properly. To address this problem, a basic rule has been established for all types of qualifiers: if one ignores the qualifier, the data element value must be consistent with the basic definition of the data element's semantics in the DC. Thus, qualifiers can only constrain or refine the semantics of the DC data elements; they cannot be used to alter their meanings so that they are inconsistent with the original definitions. Definition of the data elements which should under normal practice be qualified, and what the appropriate values of these qualifiers should be, is a subject of ongoing work within the DC community; in a sense, this can be viewed as a discussion about how to extend the DC beyond the original fifteen elements in practice without destabilizing the original definitions, although some qualification (for example, to indicate the language or format of the data element value rather than the meaning of the data element itself) really has a different and less semantically significant character. It remains to be seen how the use of qualifiers will evolve within the various communities of DC users.

Relationship to Surrogates

Another controversial issue in the definition of the Dublin Core has been how use of the DC elements should interact with the surrogates that are so commonplace in the digital environment. For a document that was created as a digital object, matters are simple: the DC data elements describe the document. The creator of the document is the person who authored it. But consider this common case: there is a painting hanging in a museum that was created by artist X; fifteen years ago, photographer Y took a picture of this painting; last week, curator Z digitized Y's picture of X's painting. What are the semantics of the DC metadata associated with the digitized image? The answer is that there should be three groups of DC metadata: one for the painting, one for the photograph, and one for the digitized image. The first would list X as creator; the second Y, and the third Z. The three groups of DC metadata would be connected through the "relation" data element. This has the advantage of being conceptually simple, albeit a bit verbose, for those creating metadata (though this can clearly be mitigated by a well-designed data entry system for DC metadata). It also places a considerable burden on

the design of retrieval systems to behave intelligently: to many users, the conceptual distinction between painting, photo, and digitized image is at best murky, and an end-user query will often ask for the painting when what the user really wants is a digitized image of the painting. Retrieval systems will need to be able to retrieve clusters of groups of DC data elements and present them to the user in a comprehensible fashion.

The Evolution and Documentation of the Dublin Core

To date, the DC has been developed informally by a loose international consortium of interested parties through a series of five workshops: Dublin, Ohio (from which the core takes its name); Warwick, England; Dublin, Ohio again (a meeting focused specifically on the role of the DC in describing visual resources); Canberra, Australia; and Helsinki, Finland. The sponsors of these meetings have included OCLC, the National Center for Supercomputing Applications, the National Science Foundation and the Coalition for Networked Information in the U.S., UKOLN in the U.K., the Australian National Library, the National Library of Finland, and many others. Stuart Weibel of OCLC has been the leader of the effort since the beginning.

At the conclusion of the Helsinki meeting in late 1997, a series of working groups were chartered to continue efforts to extend and refine various aspects of the DC. It is likely that work in 1998 will proceed through a series of smaller meetings focused on specific issues, concluding with a sixth plenary meeting late in 1998.

At present, the Dublin Core is documented in a series of meeting reports and articles in *D-Lib Magazine*, and in working documents on the DC website <http://purl.org/metadata/dublin_core/>; this site includes extensive information on the meetings, bibliographies, and other useful links. A series of informational (not standards-track) IETF RFCs are in preparation and should be released within the next few months. There are ongoing discussions about progressing the DC through the U.S. National Information Standards Organization as a formal standard, and also about what should be done to provide an ongoing "home" and maintenance agency for the standard if and when it is finalized.

Note should also be made of the work of the World Wide Web Consortium, which is working on a program they call the Resource Description Format (RDF). While this work is not directly driven by the DC, and in fact has some of its roots in extending earlier Consortium efforts to develop PICS (the Platform for Internet Content Selection) for rating and content filtering applications, the group working on RDF includes heavy representation from the DC community. The goals of the RDF effort include the definition of general mechanisms for attaching metadata of all kinds to web pages composed using the new Extended Markup Language (XML) defined by the Consortium, including DC metadata, the development of schema definitions for metadata sets, and query facilities for metadata. This work will likely be central to facilitating the large scale use of DC within the Web.

More information on PICS, RDF and XML can be found at the Consortium's website <http://www.w3c.org/>.

Machinery Needed to Support the Use of the DC

At one level, the Dublin Core is a conceptual construct; it captures the idea that there are pieces of text that can be associated with an information object with agreed-upon semantics such as those of "creator" or "relation." In order to make this conceptual construct concrete and to apply it in the networked information environment—which is characterized by the cooperation of large numbers of autonomous machines and agencies, and the sharing of information among them—there is need for a variety of supporting machinery. This machinery is codified in supporting standards and practices. It's important to recognize that, in a sense, the Dublin Core transcends specific machinery, and that many different mechanisms can legitimately be developed within different communities of practice and implementation to meet these requirements. It is likely that over time new mechanisms will continue to develop as a result of the overall evolution of architectures and standards for the networked information environment.

The three major classes of mechanisms are: encoding and transfer syntaxes; methods of associating or attaching groups of Dublin Core data elements with the information objects that they describe; and, more generally, methods of retrieving or querying Dublin Core data associated with objects or groups of objects.

Several methods have been proposed for encoding groups of DC data elements for storage and inter-system exchange: these include the use of HTML META tags in today's HTML-based web pages; the use of XML structures as specified by the World Wide Web Consortium's Resource Description Framework (RDF) as part of future XML-based web pages; and the incorporation in SGML. Several of these proposals also address the problem of associating DC elements with objects in a very direct way: in the Web setting, they are simply incorporated as part of web pages. There is also a way of requesting DC information for an object via HTTP (thus leaving it up to the web server to maintain the linkage between DC elements and the base object internally); this mechanism can also be used to query third-party metadata servers for DC metadata.

One of the key deployment scenarios envisioned for the Dublin Core is that web pages will increasingly

incorporate DC data elements as part of the pages—using either direct coding in META tags for current HTML pages or the new RDF structures for pages in the newly defined XML format—and that the familiar web indexing programs (or their successors) will be upgraded to capture this metadata and incorporate it into their web indexes, so that one could query a system like Lycos or Alta Vista for pages that have a specific creator, for example. This metadata might be created by the authors of the pages, by website managers, or by third party indexers/catalogers. Complementing this, we are likely to see third party databases of DC metadata develop which simply refer to and describe web content and other information objects.

It's essential to recognize that while the Web—and in particular the static, visible web of HTML pages—is a key applications environment for DC, it is not the only one. It is perfectly reasonable to think in terms of databases containing objects described by DC data elements; here the DC data elements would be encoded and linked through some local data structures. The retrieval of an object from such a database—accomplished through an interactive forms-oriented query interface or an inter-system query protocol like Z39.50—might cause the retrieved object to be encoded as a well-known, common format, such as a page that included XML tags for the relevant DC elements. Similarly, one might want to associate DC elements with an entire website or database; here one would need a mechanism (perhaps akin to some of those used in the Harvest system) that could be used by network resource indexing systems that build site or database directories. (For more on these issues, see Clifford A. Lynch's "Searching the Internet," *Scientific American* 276.3 [March 1997]: pp. 52-56, available at <http://www.sciam.com/0397issue/0397lynch.html>.)

At present, query facilities for Dublin Core data elements are very diverse. There are a number of interactive query systems that offer DC data elements as access points to specific databases or other information collections. Several Z39.50 attribute sets—notably GILS and BIB-1—are incorporating the DC elements as access points that can be used in query construction, and, as part of the migration to the new Z39.50 attribute architecture, it is likely that a separate Z39.50 attribute set will be defined. Part of the RDF work program includes the definition of query facilities for metadata; however, work on this is only at the earliest stages.

Applications Scenarios for Libraries

The Dublin Core has two different basic applications for libraries. The first is in permitting library databases to become part of broader network search services, or to allow libraries to provide their patrons with consistent views of both library and non-library databases. The second is in describing new resources that cannot be cost-effectively supported through traditional cataloging approaches.

Use of DC in Federating Existing Resources

One of the key notions in networked information discovery and retrieval is that of *federating* disparate, independently maintained databases scattered about the network. Users should be able to search such constellations of databases as if they were a single, consistent, unified information resource. In order to do that, it is necessary to provide a common semantic view of the various databases involved, even though they may have radically different access points and data structures, and may be accessed through different search protocols or other query mechanisms.

I think it is likely that libraries will use this capability to make their databases visible in database federations that operate outside of the traditional library systems and services...

Because the Dublin Core is designed as a lowest common denominator descriptive approach, it offers a very flexible and general context to support federation. Traditional library catalogs or abstracting and indexing databases can clearly support queries constructed using Dublin Core data elements (albeit with some reduction in the precision that queries can express as compared to queries formulated using the database's native search language, unless qualifiers are used extensively); thus it is possible to build a software layer that permits such databases to participate in federations that use the Dublin Core data elements. These interfaces will use mappings or crosswalks to translate from Dublin Core data elements to the actual access points in the database. Mappings have already been developed from DC to MARC fields.

I think it is likely that libraries will use this capability to make their databases visible in database federations that operate outside of the traditional library systems and services—these databases could be searched as part of a distributed search system that also encompassed web-based resources outside of the library. To illustrate, suppose that a group of art history scholars developed a database of digitized images that were described using DC, and build a search system for that database. By making a DC-based "view" of a resource like a library

catalogue or an art history abstracting and indexing database available on the Net, it would be possible to easily extend their system to also consistently search across the database and catalogue as supplemental resources. Or a system designed to search digital instructional media might be extended to also search library holdings through the same interface.

Conversely, because the Dublin Core is applicable to so many information resources, a library might develop a search interface and distributed search service that offered patrons a federated view of a very diverse set of databases, including not only traditional library databases, but also databases from other sources, such as government databases, databases produced by the next generation of web indexing services, or special purpose scholarly databases. While such a search service would not eliminate the need for much more precise and capable domain-specific and database-specific search facilities, it would be very useful to some users both in identifying databases of interest which they might then search directly for more comprehensive and precise results, or in doing very broad (not but necessarily precise or exhaustive) searches across a wide range of resources. In this connection, it is interesting to note that the Instructional Management System (IMS) being developed by Educom's National Learning Infrastructure Initiative (NLII) is using a descriptive scheme based in part on the Dublin Core for instructional media; this is a good example of a possible new resource that libraries may want to bring under the umbrella of a search system that also covers their catalogue and abstracting and indexing databases. (For more details on the NLII and its IMS project, see <http://www.imsproject.org>.)

Use of the Dublin Core in Describing New Content

The Dublin Core—perhaps supplemented by additional metadata packages defined within the Warwick Framework—will be used to describe content where traditional cataloging approaches are too costly, or where there is a need to create metadata for content that is not well served by current cataloging practices. The NLII IMS is a good example: many of the key things that users need to know in searching for instructional media can only be captured by traditional cataloging in unstructured textual notes. The IMS supplements the DC elements with an additional descriptive package designed specifically for instructional media. For digitized images or other materials, whether created directly in digital form or digitized from other media (e.g., special collections), full bibliographic cataloging is particularly expensive because most of these items are unique, and libraries cannot use the system of shared copy cataloging to control and distribute costs. It's important to note that, while the Dublin Core was designed to be simple and thus much less expensive to apply than traditional AACR-2 based original cataloging, there is relatively little experience with it, particularly when the DC is supplemented with additional metadata packages. One effort that needs to take place over the next few years as part of the experience in using Dublin Core is some measurement of the cost savings over traditional cataloging for various types of material. We also will need to understand how retrieval quality varies with the different descriptive approaches.

The use of the DC and the Warwick Framework gives libraries the ability to design supplementary metadata sets —descriptive and otherwise—to characterize materials that either require more depth or precision of description than the Dublin Core alone can offer, or need not only descriptive but also other types of metadata associated with them in order to support processes that go beyond discovery (e.g., management, use and reuse, or rights clearance). Instructional media objects are a good example of such a category of materials; statistical datasets are another. Museums will likely make substantial use of the DC plus additional metadata packages. To a great extent, I suspect that library use of the DC for description will be determined by the policy choices that libraries make about their role in creating descriptions for materials that have not historically been part of the mainstream of library collections, as opposed to simply making use of descriptions for these materials created by other (non-library) organizations.

Conclusions

The Dublin Core is clearly, in my view, going to be important for libraries both as an engineering tool for federating library and non-library databases, and also as a lower-cost alternative for describing materials. The creation of Dublin Core descriptions is going to be of particular interest for libraries expanding their collections with large amounts of digital content: images, sound recordings, video recordings, and new genres of networked information. In the longer run, I think it will also be important for libraries to track the work on the implementation of the Warwick Framework and to monitor the definition of additional metadata sets within that framework, which will be needed to address issues such as provenance, integrity, and management of digital content.

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Editor's Note: NINCH, the National Initiative for a Networked Cultural Heritage, is the U.S. distributor of a 1997 U.K. report *Discovering Online Resources Across the Humanities: A Practical Implementation of the Dublin Core.* Contact ARL Publications for order information <pubs@arl.org>.

RECON PROJECT FOR PRESERVATION MICROFILM MASTERS COMPLETED

by Jutta Reed-Scott, Consultant for Preservation and Access Services

Over the past decade, ARL has managed a series of cooperative projects for creating more than 579,000 online records for monographic and serial preservation microform masters that were listed in the National Register of Microform Masters (NRMM). These projects have been funded by grants from the National Endowment for the Humanities, Division of Preservation and Access, as well as by an initial grant from The Andrew W. Mellon Foundation and major contributions by project participants. In December 1997, ARL completed the final steps in the retrospective conversion of the NRMM. The NRMM reports are now available online in the OCLC and RLIN databases and are accessible to the broadest possible community of national and international scholars.

Project Highlights

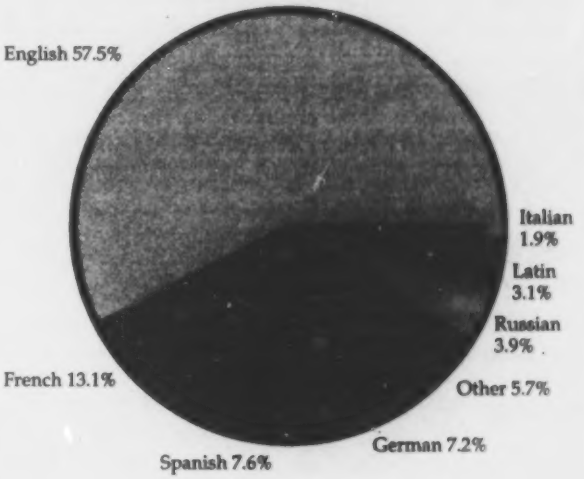
The NRMM machine-readable records were created according to national standards for national and international distribution. With some minor exceptions, all reports included in the NRMM have been processed, representing:

- 549,147 monographs (over 12,000 in non-Roman languages);
- 22,729 serials (Harvard, New York Public Library, and Library of Congress holdings); and
- 7,083 musical scores.

A striking aspect of this recon project is that the new online records describe titles held by more than 230 different libraries and other institutions that contributed reports to the NRMM. The Library of Congress (LC), the largest noncommercial producer of microfilm, the New York Public Library, as well as Harvard University Libraries and several other ARL libraries played dominant roles in contributing records to the NRMM. Among vendors, University Microfilms International, General Microfilm Company, and Research Publications were major contributors. While large research libraries and vendors reported the majority of NRMM reports, an array of university and college libraries, historical societies, archives, and state and public libraries also contributed a significant number of titles to the NRMM.

Equally diverse are the languages of the titles described by NRMM reports, with more than 200 different languages represented. As the accompanying chart illustrates, over 40% of the reports are in languages other than English, concentrated primarily in Western European languages. All other foreign languages make up about 10%. CJK (Chinese, Japanese, and Korean) reports were not converted by the project.

NRMM LANGUAGE DISTRIBUTION



Not surprisingly, the NRMM reports reflect the clustering of publication dates in the late 19th and early 20th centuries. More unexpected is that more than 16% of the reports show publication dates before 1850, with some published as early as the 13th century.

Though these statistics cannot capture the vast scope of the materials described by records converted through the NRMM Recon Project, they do document the extraordinary range of early preservation microfilming efforts.

Background and Project History

The National Register of Microform Masters is itself a landmark in library cooperation. Keyes Metcalf first proposed establishing a national register of microform masters in 1936. The NRMM was finally begun in 1965 as the direct result of a study conducted for ARL by Wesley Simonton. His report summarized the well-known problems associated with rapid growth in preservation microfilming without concomitant bibliographic control. The Library of Congress responded to the call for action and took the lead in establishing the NRMM, the most significant effort by the library community to collect, organize, and disseminate information about preservation microfilm masters. The NRMM Master File, the largest single file of records for microform masters in the United States, consisted of reports for microform masters sent to the Library of Congress by hundreds of different libraries, historical societies,

and publishers between 1965 and 1983. NRMM was published annually by LC until 1984, with one cumulation covering the years 1965 to 1975.

During its 18 years of existence, NRMM was the best tool that could be produced for that time. NRMM's value to the library and scholarly community is enormous, and the automation of NRMM makes possible a quantum improvement in the ease of use and ease of access to the records.

In 1986, with funding from NEH and matching funds from The Andrew W. Mellon Foundation, ARL and LC joined in the complex undertaking of creating machine-readable records of the NRMM reports.

The early road of the project was bumpy. The major problem was the default of the first project contractor in 1990. A second problem was the discovery that the NRMM file contained a significantly greater number of reports than had been estimated in the 1985 sampling study. ARL overcame both problems. ARL first transferred the project to a new contractor, OCLC's Retrospective Conversion Department. Since 1990, OCLC's staff have processed more than 518,000 NRMM reports under an ARL contract. ARL also successfully obtained funding from NEH for processing the unexpected additional reports. While converting the NRMM records took far more time and was more costly than initially projected, the goal of creating machine-readable records for all the NRMM reports that could be converted has been accomplished.

An accompanying chart (p.13) highlights progress during the NRMM Recon Project.

Financing the Conversion

Major funding for the multi-year projects was provided by the National Endowment for the Humanities. Over the life of the NRMM Recon Project, NEH awarded ARL a series of grants totalling $2,182,653. NEH's investment in the Project once more underscores the vital importance of federal support for national preservation efforts. The Library of Congress made substantial contributions of technical assistance and staff for the quality review throughout the project. A critical component of the project's financial support has been OCLC's in-kind contributions, which have substantially reduced the unit cost for creating machine-readable records for the NRMM. OCLC's subsidy on behalf of research libraries has exceeded $480,000.

Working Together

The Library of Congress was a vital partner in this project and played a unique role. While LC's primary responsibility was the establishment of the quality assurance program, LC was also responsible for holding the microform security copy of the reports and for the distribution of project tapes. Most importantly, LC staff throughout the project provided advice on the technical specifications and conducted the extensive quality control.

In partnership with the Library of Congress, both Harvard University and New York Public Library provided significant staff support during the serials phase of this project. NYPL also assisted in the review of its non-Roman records during the final project phase.

Many other libraries have also contributed to the successful automation of the NRMM. At the end, every large-scale retrospective conversion project confronts a significant number of records that cannot be processed within the standard workflow. For the NRMM project, these include reports with incomplete information, selected serials, and some non-Roman reports. Cards for records not converted were returned to the institutions that created them for in-house review and processing, if required. Specifically, all East Asian reports have been turned over to institutions that created them for in-house processing.

ARL plans to set up a special web page for the NRMM Recon Project to provide detailed information about the scope and content of the automated NRMM records and about the small percentage of NRMM reports that could not be processed as part of the project.

Bibliographic Guidelines and Quality Review

Special attention to quality control was a hallmark of this project. The project's initial bibliographical specifications were an important impetus for developing ARL's *Guidelines for Bibliographic Records for Preservation Microform Masters* in 1990. Since then, the *Guidelines* have served as the project's bibliographic standards.

Following agreed-upon criteria, LC staff members reviewed a random sample of records in all batches prepared by OCLC. The number of records in a batch and the interval between batches was determined by LC, ARL, and OCLC. Overall accuracy was set at a minimum of 94 percent. Each project phase included an initial development period during which LC staff reviewed all records in each batch. For the production periods, the contract with OCLC specified that the entire batch of records would have to be redone if the batch did not meet quality review accuracy requirements. ARL never had to invoke this clause.

Benefits

The automation of the NRMM files improves access to preservation microfilm masters. The linchpin of the national and now international preservation effort is the ability to showcase records of preserved titles.

Ongoing preservation programs that aim to reformat embrittled materials benefit significantly from the NRMM recon project because it makes it practical and economical to identify titles already filmed. For users, the online NRMM records expand access to specialized research materials that have been preserved.

The greatest benefit of the online NRMM lies in enhanced productivity. For all libraries, the machine-readable NRMM improves the efficiency of bibliographic searching and ensures against duplication of microfilming. Not only was searching in the printed, multi-volume NRMM a time-consuming task (at least one search in the 1965-75 volumes, and potentially eight additional searches in the annual volumes), but it was also easy to miss a title, since it is listed only under a single access point. In contrast, the online NRMM makes possible a one-step search, which dramatically reduces the amount of staff time needed for pre-filming searches. The danger of missing a record is also minimized since the machine-readable records are accessible by several access points.

Of equal benefit is the addition of thousands of original bibliographic records for specialized research materials to the national databases. The automation of the NRMM provided a large body of new catalogue records since many titles were not previously included in OCLC or RLIN. That was especially true for the 7,083 musical scores, of which 58% required original records. Over time, the use of these converted NRMM records for local cataloging will translate into reduced cataloging costs in libraries.

Future Directions

One challenge looms large: Providing rapid access to copies of the microfilms. The user expects to get ready access, but several studies have documented the lengthy delays in obtaining filmed materials. While several organizations have explored centralized delivery services, the economic uncertainties of such services have so far posed insurmountable barriers. However, the need remains to improve interlibrary loan, document delivery, or other access services for materials preserved on microfilm.

In addition, digitization offers intriguing opportunities to improve access to such resources. The technology of digitizing from microfilm has matured, but the financial resources needed to digitize more than half a million preservation microfilm masters would be formidable. One intermediate strategy may lie in digitizing the table of contents pages from selected volumes and making them available on the World Wide Web for browsing by researchers.

The NRMM Recon Project has contributed substantially to building the infrastructure for bibliographic control of preservation microform masters. The next step is to deliver on a broader vision: To allow users to access electronically the information now preserved on microfilm.

NRMM Recon Project Milestones

Records Processed	Cumulative # of Records	Project Phases
16,239 monographs (12,851 Non-Roman)	579,425	Phase VI July 1996–December 1997
22,729 serials and 7,083 musical scores	563,186	Phase V January 1994–October 1996
54,000 monographs	533,374	Phase IV June 1993–February 1994
160,000 monographs	479,374	Phase III February 1992–May 1993
258,000 monographs	319,374	Phase II June 1990–March 1992
61,374 monographs	61,374	Phase I July 1987–June 1990

FEDERAL RELATIONS

Prudence S. Adler, Assistant Executive Director-Federal Relations and Information Policy

CHECKLIST FOR DRAFTING ELECTRONIC INFORMATION POLICIES

In today's emerging electronic information environment, characterized by a panoply of networks, software, and information content, it is important that every research university and other institutions prepare and disseminate policies concerning the use, creation, and exchange of electronic information. Electronic information policies, though requiring unique elements, ought to be an extension of existing information policies. These electronic policies should describe roles and responsibilities of users and providers, and should address appropriate behaviors, not only on campus systems, but also on the World Wide Web and the Internet generally.

The following is a checklist of issues to consider when drafting electronic information policies. The checklist, prepared by the Information Policies Committee of the Association of Research Libraries, is designed as a guide for universities and other institutions that are developing, reviewing, or revising electronic information policies.

1. An introduction

An introduction should state the need for and purpose of the policy, and contains an explanatory statement about the underlying values and principles guiding the policy.

Values

- Respect for freedom of inquiry and expression, and a vigorous opposition to censorship
- Respect for the rights of others, especially rights of privacy and confidentiality
- Respect for intellectual property
- Respect for all members of the community of users, including minors
- Respect for appropriate conduct in a public forum, including civility, respect for others, and respect for diversity
- Respect for law, for due process, and for the presumption of innocence
- Other values of local importance

Principles

Everyone using university information resources is expected to honor the values of her or his academic community, whose existence makes the use of those resources possible. Every user is also expected to be considerate of the needs of other users by making every reasonable effort not to impede the ability of others to use those resources. Examples of infringements of these principles may include, but are not limited to, activities that:

- obstruct usage or deny access to others
- compromise privacy or confidentiality
- involve unauthorized use of computer accounts
- attempt to modify system facilities without authorization
- allow unauthorized access to private accounts
- involve unauthorized use of resources for commercial enterprises
- violate intellectual property rights
- violate license agreements
- violate university or institutional rules or policies
- violate local, state, or federal laws

2. Access issues

- Delineation of who is assured access to what resources and within what time frames
- Different levels of access that are provided to different categories of users
- Use of public facilities (e.g., computing labs)
- Circumstances under which private equipment can be attached to publicly-owned or grant-funded equipment
- When access can be denied or revoked

3. Electronic mail issues

- Delineation of when and to whom the institution can deny access to its electronic mail services
- The circumstances under which the institution can inspect, monitor, or disclose electronic mail, and the conditions under which this can be done without the holder's consent
- Restrictions on personal use
- Restrictions on commercial, political, or religious use
- Use for union activities
- Use of anonymous mail, chain letters, mail reflectors, and listservs
- Forwarded mail after someone has left the institution
- Archiving
- Public records
- Libel and obscenity
- Additional issues raised because of the presence of the institutional identifier within the domain portion of an electronic mail address

4. Websites and Web publishing issues

- Policies governing content on a website
- Personal homepages, if permitted (questions of content need to be managed carefully)
- Restrictions on pointers and links to other websites
- Restrictions on the use of copyrighted material on websites
- Use of university or institutional logos and trademarks on websites
- Definition of an "official" website of the institution, and a description of how such a designation is granted
- Levels of use and traffic
- Restrictions on anonymous websites
- Use of commercial services
- Internet gambling
- Libel and obscenity
- Adherence to all local, state, and federal laws

5. Network use issues

- Inappropriate use of the network (e.g., IP address spoofing, sniffing, and other inappropriate actions)
- Limits on amount of use
- Expectations of the user concerning network security

6. Coordination on campus

Campus units that may be involved in the process of writing the policies include:

- Campus Libraries
- Information Technology
- Academic Computing
- Academic Affairs
- Legal Counsel
- Public Relations
- Faculty
- Student Affairs

7. Archiving

The policy should include strategies for archiving or preserving electronic resources. All relevant campus or institutional units, such as Computing, Libraries, and Archives, should be consulted in order to determine the attendant responsibilities and procedures for electronic archiving.

8. Due process issues

An information policy should identify the forms of redress available if policy violations occur and the processes that will be followed. It should delineate between those actions that transgress university rules and regulations concerning appropriate behavior and those actions that may involve violations of the law. In some instances, such as child pornography, an institution's discretionary latitude may be severely restricted by federal statutes.

9. Definitions

It will be important for each campus or institution to determine relevant definitions (e.g., user, authorized user) and to include those definitions in the policies.

10. Implementation and review

Institutions ought to set forth a process for implementation and review, and determine how often the policy gets reviewed or revised. It is important that the policy be clear and unambiguous, and able to be understood by all users of electronic resources. Moreover, the policy should be made readily available to all users—for example, posted at public terminals and on institutional websites.

Prepared by Paula T. Kaufman (University of Tennessee, Knoxville) and Gerald R. Lowell (University of California, San Diego) with the ARL Information Policies Committee.

Sample Electronic Information Policies

Auburn University
http://www.auburn.edu/its/guide/policies.html

University of California, Davis
http://www.ucdavis.edu/AUP.html

University of California, San Diego
http://www-acs.ucsd.edu/main/instsupp.html

University of California, Santa Barbara
http://www.ucsb.edu/policy.shtml

University of Georgia
http://www.uga.edu/~ucns/sites/use.html

Georgia Institute of Technology
http://www.gatech.edu/itis/policy/usage/contents.html

University of Houston
http://www.uh.edu/info_serv/users_guide/guidelines.html

Indiana University
http://infotech.indiana.edu/policy/policy.html

Johns Hopkins University
http://www.jhu.edu/www/jhuniv/guidelin.html

Université Laval
http://www.ulaval.ca/sg/reg/Politiques/index.html

Lousiana State University
http://www.lsu.edu/OCS/homedocs/usage_policy.html

University of New Mexico
http://www.unm.edu/cirt/info/general/ethics.html

Northwestern University
http://www.nwu.edu/it/policies .

University of Tennessee Knoxville
http://www.cas.utk.edu/CAS/casccp.html

OMS RENAMED OFFICE OF LEADERSHIP AND MANAGEMENT SERVICES

Effective January 1998, the ARL Office of Management Services (OMS) adopted the new name of Office of Leadership and Management Services (OLMS). The new name corresponds to the change in name for the ARL Committee on Leadership and Management. The new title is intended to convey the focus of the Office on advancing both the discourse and practice of shaping research library and information service organizations of the future. Use of the new title has begun and will be phased in during the year on pre-printed materials.

Also in January, the search for a Director of ARL's Office of Library and Management Services was suspended for at least six months. Changing circumstances at ARL have prompted a broad review of the staffing requirements at the Association over the short- and long-term. OLMS will continue to operate under the very able leadership of Kathryn Deiss, Senior Program Officer for Training and Leadership Development.

EVALUATING THE PERFORMANCE OF THE ACADEMIC LIBRARY DIRECTOR

At the request of the ARL Committee on Research Library Leadership and Management, ARL undertook, in the fall of 1997, a study of the performance evaluation processes for ARL library directors. The study was conducted by George Soete, ARL/OLMS Organizational Development Consultant, with the advice of Paul Kobulnicky, Director of Libraries, University of Connecticut, and Sarah Michalak, Director of Libraries, University of Utah. The study entailed a survey of ARL Directors who were asked to describe and assess current practices, to provide suggestions for how the processes may be made more effective, and to share relevant documentation from their institutions.

Snapshots of the survey findings follow.

- Formal reviews of Directors are now a permanent and fast-growing feature of the human resources systems of the parent institutions of ARL libraries—of the 74 directors participating in the study, 84% have a formal performance review.
- Most reviews (74%) were initiated and conducted by the person to whom the director reported, typically the provost or a vice-president, though this administrator often involved other participants in the process.
- Director reviews are tending to have broader participation, with the most frequently named participants being librarians and library support staff, non-librarian faculty, and other academic administrators.
- A majority of directors indicated there were no formal guidelines or criteria for the review process—often these are developed ad hoc during the review.
- Only 21% of review processes had a salary decision as an outcome; more than half (52%) reported that contract renewal or reappointment was an outcome related to the process.

As part of the study, Mr. Soete has also prepared a short document to guide those who are responsible for or who will participate in the performance evaluations of academic library directors. It is written as a checklist and is intended to foster both effectiveness and fairness in director evaluations and to strengthen library leadership as part of the overall process of strengthening our libraries.

The full study findings will be reported in two publications forthcoming from the ARL: *SPEC Kit #230* will present the results of the survey describing current processes and documentation from member libraries, and OLMS *Occasional Paper #21* will address analyses and evaluations of current practices and provide guidance for improving these processes.

OLMS CALENDAR OF TRAINING EVENTS 1998

March 10-13
LIBRARY MANAGEMENT SKILLS INSTITUTE I: THE MANAGER
Seattle, WA

April 28-30
HUMAN RESOURCES INSTITUTE
Baltimore, MD

May 4-7
LIBRARY MANAGEMENT SKILLS INSTITUTE II: THE MANAGEMENT PROCESS
Los Angeles, CA

October 7-9
FACILITATION SKILLS INSTITUTE
Washington, DC

October 27-28
LEADING CHANGE
Chicago, IL

November 16-19
LIBRARY MANAGEMENT SKILLS INSTITUTE I: THE MANAGER
Washington, DC

For registration information contact Christine Seebold via email <cseebold@arl.org> or phone (202) 296-8656.

DeEtta Jones, Diversity Program Officer

LEADERSHIP AND CAREER DEVELOPMENT PROGRAM MATCHES PARTICIPANTS, RESEARCH TOPICS, WITH MENTORS

Work is underway on the research projects proposed by each of the 21 participants in ARL's Leadership and Career Development Program. Listed below are the topics and designated mentor of each LCD Program participant. A program is planned for June 1998, scheduled in conjunction with the ALA Annual Conference, where participants will present their projects to their peers, mentors, and the larger library community.

Participant: **Maria de Jesus Ayala-Schueneman**
Associate Professor
Head of Reference Services
Texas A&M University-Kingsville
Research Project: The Examination of Reference Services as They Relate to Faculty
Mentor: **Emily Mobley**, Purdue University Library

Participant: **Jon Cawthorne**
Reference/Coordinator for Outreach Services
University of Oregon
Research Project: Spoke for the Library: Academic Library Outreach
Mentor: **Paula Kaufman**, University of Tennessee Libraries

Participant: **Vicki Coleman**
Instructor/Head, Electronic Reference Services
Texas A&M University
Research Project: Public Services for the Virtual Library Patron
Mentor: **Dana Rooks**, University of Houston

Participant: **Patrick Jose Dawson**
Librarian III Reference Coordinator,
Head, Colección Tloque Nahuaque
University of California - Santa Barbara
Research Project: Cataloging and Description of Digital Resources
Mentor: **William Gosling**, University of Michigan Library

Participant: **Tracey Joel Hunter**
Reference/ Collection Development Librarian
Temple University
Research Project: A Study of the Information Seeking Behavior of African-American Students at an Urban ARL Library - Temple University
Mentor: **Shirley Leung**, University of California-Irvine Libraries

Participant: **Glendora Johnson-Cooper**
Associate Librarian
University of Buffalo
Research Project: Reference Services and Digital Demands
Mentor: **Nancy Eaton**, Pennsylvania State University Libraries

Participant: **Kuang-Hwei (Janet) Lee-Smeltzer**
Copy Cataloging Manager
University of Houston Libraries
Research Project: A Survey of Some Enhancements to the Dublin Core and Their Effect on Access to Internet Resources.
Mentor: **Jennifer Younger**, University Libraries of Notre Dame

Participant: **Barbara (Barbi) Lehn**
Director of Library Services
Sinte Gleska University
Research Project: To develop a document for publication that is both a collection development polity to guide acquisitions and an evaluative tool to measure progress toward the fulfillment of the library's mission.
Mentor: **Sherrie Schmidt**, Arizona State University Library

Participant: **Poping Lin**
Assistant Engineering & Science Librarian for Core Information Competencies
Massachusetts Institute of Technology
Research Project: The Integration of Information Competencies with the Training of Innovative Engineers
Mentor: **Miriam Drake**, Georgia Institute of Technology Library

Participant: **Nerea Llamas**
Assistant Librarian
University of California-Santa Barbara
Research Project: Evaluating the Instruction need of Faculty and Students in the Humanities
Mentor: **Joseph Branin**, SUNY - Stony Brook Libraries

Participant: **Johnnieque (Johnnie) Blackmon Love**
Reference/Cultural Diversity Librarian
University of Kansas
Research Project: Designing a Program Evaluation Model for Assessing Effectiveness of Diversity Programs in an Academic Library
Mentor: **Joan Giesecke**, University of Nebraska-Lincoln Libraries

Participant: **Thura Mack**
Associate Professor
University of Tennessee
Research Project: Providing Research and Development Services for Selected Scientific Fields Using Intelligent Agents
Mentor: **Pamela Andre**, National Agricultural Library

Participants: **Teresa Neely**
Assistant Professor
CSU/Teaching Fellow
Colorado State University
Research Project: Promotion and Tenure and Electronic Publications
Mentor: **Scott Bennett**, Yale University Library

Participant: **Neville Durrant Prendergast**
Associate Librarian/Coordinator Information Management Education
University of Buffalo
Research Project: The Development of A"Teaching Library" Within the Health Sciences Library
Mentor: **Stella Bentley**, Auburn University Libraries

Participant: **Gloria Rhodes**
Multicultural Outreach Librarian
California State University - San Marcos
Research Project: Information Competencies: A Benchmarking Project
Mentor: **Ann Prentice**, University of Maryland-College Park, SIS

Participant: **Carlos Rodriguez**
Science Reference Librarian
University of California - Riverside
Research Project: How Technology Shapes the Quality of Undergraduate Research
Mentor: **Camila Alire**, Colorado State University Library

Participant: **Janice Simmons-Welburn**
Coordinator Personnel and Diversity Programs
University of Iowa
Research Project: A Study on the Relationship Between Academic Libraries and the Goals on Diversity and the Goals of Their Parent Institutions
Mentor: **Carla Stoffle**, The University of Arizona Library

Participant: **Denise Stephens**
Geographic Information coordinator
University of Virginia Library
Research Project: Introducing Emerging Technology as Service: Implications for Library
Mentor: **Susan Nutter**, North Carolina State University Libraries

Participant: **Elayne Walstedter**
Reference/Outreach SpecialistFort Lewis College
Research Project: Recruitment of Native Americans and Latinos into the Library Profession, Primarily in the American Southwest
Mentor: **Nancy Baker**, Washington State University Library

Participant: **Valerie Wheat**
Branch Librarian
Smithsonian Institution
Research Project: Museum/Library Collaborations: A Natural Cultural Partnership
Mentor: **Barbara von Wahlde**, State University of New York at Buffalo

Participant: **Mark Winston**
Assistant University librarian
Valdosta State University
Research Project: A Research Study of Science and Engineering Librarians: Recruitment, Demographics, and Professional Activities
Mentor: **James Williams III**, University of Colorado Libraries

ARL Activities

G. Jaia Barrett, Deputy Executive Director

ARL Directory Tracks Growth in E-Publishing

by Dru Mogge, ARL Electronic Services Coordinator

Now in its seventh edition, the ARL *Directory of Electronic Journals, Newsletters and Academic Discussion Lists* continues to document the growth in electronic publishing. This year's *Directory* includes over 3,400 titles, a 100% increase over last year's count of 1,689. The number of e-journals (which includes titles classified as "e-zines," or magazines) make up 72% of the total, with 2,459 listings, while e-newsletters account for 955 entries. The lists section (electronic conferences, including discussion lists, news groups, interactive web chat groups, etc.) also grew, from 3,118 entries last year to 3,808 this year, a 22% increase.

One of the striking increases is in peer-reviewed titles. In the first edition of the *Directory*, published in 1991, 6.4% of the titles listed were identified as peer-reviewed; in 1993, 13.2%; in 1995, 20.6%; and in 1997, 30.7% of the titles in the *Directory* are so identified. Electronic scholarly publishing is growing as more and more traditional publishers find ways to make their publications available online. While counts are not available from the *Directory* for "electronic only" publications, the trend is to continue to make both print and online versions available.

A sign that commercial publishers are joining the trend is the increase in fee-based titles. In 1991, only two serial titles in the *Directory* charged for access. In 1995 and 1996, just 10% of the *Directory* serial titles charged a fee for online access; this year, almost 27% (912 titles) charge a fee.

Both the e-journals and the lists that make up the *Directory* were analyzed for subject content and keywords were assigned to entries based on a thesaurus created especially for the *Directory* project. The pie charts show the distribution of subjects across e-journals, e-zines, e-newsletters, and lists.

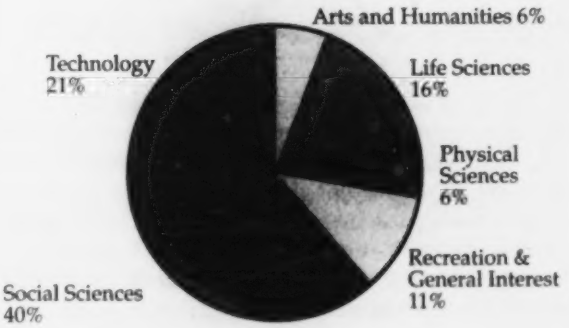
A feature added this year is a complete web version of the *Directory*. The online version offers users the ability to browse through individual entries or to search for specific items. Search options include searching by title, description, publisher, peer review basis, or subject. Also included online is the thesaurus, thereby allowing

Trends in E-Serials

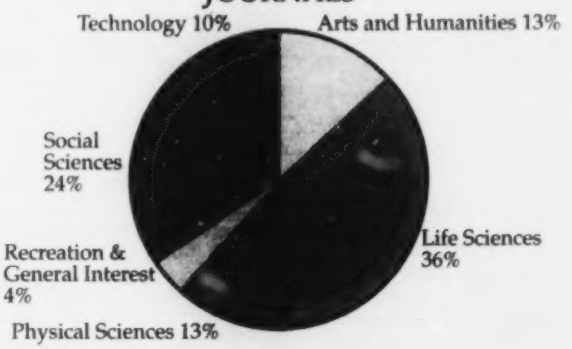
E-Journals and E-Newsletters	1991	1992	1993	1994	1995	1996	1997
Total	110	133	240	443	675	1689	3414
Peer-Review	7	15	29	73	139	417	1049
Fee	2	2	6	29	72	168	912

Based on entries for e-journals and e-newsletters included in annual editions of the ARL *Directory*

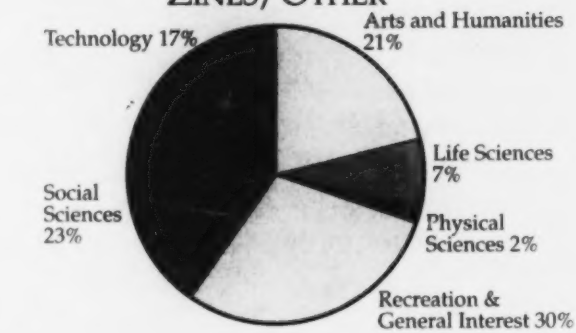
Newsletters



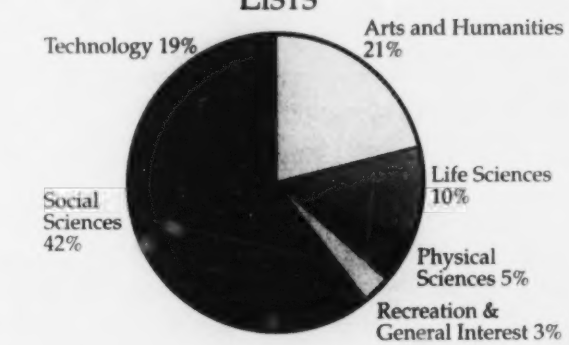
Journals



Zines/Other



Lists



users to search by specific keywords. All web-accessible e-serials in the *Directory* have a link from the entry to the title's actual site. The electronic version of the *Directory* is available as a stand-alone product, while purchasers of print copies automatically receive access to the e-version. The e-version is updated on an ongoing basis.

Each year, ARL chooses a particularly relevant or noteworthy article on electronic scholarly publishing for inclusion in the *Directory*. The 7th Edition article is Judy Luther's "Full Text Journal Subscriptions: An Evolutionary Process." Previously published in the June 1997 issue of *Against the Grain*, Luther's article reviews options offered to libraries by commercial publishers, subscription agents, and not-for-profit publishers. Luther addresses issues such as licensing packages and pricing structures, as well as various types of format.

As in previous editions, the *Directory* is divided into two major sections. Section One, Electronic Journals and Newsletters, was compiled by Dru Mogge, ARL Electronic Services Coordinator, and the ARL Directory Staff. Section Two, Academic and Professional Discussion Lists, was compiled by Diane K. Kovacs, Kovacs Consulting, and the Directory Team. The *Directory* is available for purchase as either a print and electronic package (ARL member libraries, $65; nonmembers, $95) or electronic access only (ARL member libraries, $50; nonmembers, $70). Consult either the website <http://www.arl.org/scomm/edir/> or email <pubs@arl.org> for order information.

Transitions

UC-Berkeley: Peter Lyman announced his resignation as University Librarian, effective July 1, 1998. He will become Professor in the Berkeley School of Information Management and Systems full-time.

Case Western: Joanne D. Eustis was named Director of Libraries, effective August 1, 1998. She is currently Director of Planning and Program Review, Department of Information Services at Virginia Polytechnic Institute and State University.

ARL Staff Transitions: In July 1998, ARL Deputy Executive Director **Jaia Barrett** will leave Washington, DC to accompany her husband to Kiev, Ukraine, where he has a two-year assignment at the U.S. Embassy. She will use the network to continue to work for ARL during this period. Ms. Barrett came to ARL from Duke University in 1984 as Federal Relations Program Officer, a position she held until 1989, when she took a leave of absence. On her return in 1991, she took on management of ARL's Access Program, the ARL newsletter, and the Office of Research and Development. In 1993 she was named Deputy Executive Director.

NAILDD Salutes DIG Members' Achievements

The 1998 ALA Midwinter Meeting in New Orleans marked the beginning of the five-year anniversary of the ARL North American Interlibrary Loan and Document Delivery (NAILDD) Project. The goal of the Project is to promote ILL/DD system developments that will improve the delivery of library materials to users at costs that are sustainable to libraries. To seek the involvement of the private sector, NAILDD formed a Developers/Implementors Group (DIG); over 70 for-profit and not-for-profit organizations and projects now participate.

A five-year status report for NAILDD highlights and salutes the responsiveness of some of the more active DIG members to advance the Project's technical priorities. The organizations highlighted in the report are: OCLC; RLG; The Library Corporation; Ameritech; A-G Canada; Innovative Interfaces, Inc.; Network Support, Inc./Relais International; the National Library of Canada; and the British Library Document Supply Centre. The sustained commitment of these organizations, and the resources they invest to achieve the Project's goals, are acknowledged as key contributions to the future success of library programs and services. The report was distributed during the ALA Midwinter Conference and is published on ARL's website <http://www.arl.org/access/naildd/overview/statrep/statrep-9801.shtml>.

While progress was made during the last five years, work still remains. The NAILDD Project will be fully successful when a library user is able to:

- have transparent access to a variety of local and remote library catalogs, citation databases, and electronic resources,
- transfer bibliographic citations or details about non-bibliographic items into electronic requests or orders,
- pass requests or orders through the library online system to determine local availability,
- direct the request or order to the ILL/DD department of a library or to a document supplier,
- communicate electronically with the chosen supplier, and
- receive print materials, multimedia, data, or full text/image copy of non-returnables directly at their desk or workstation.

For information about the NAILDD Project contact Mary E. Jackson, ARL Access & Delivery Services Consultant <mary@arl.org> and see ARL's website <http://www.arl.org/access/naildd/naildd.shtml>.

ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036. 202-296-2296 FAX 202-872-0884 <http://www.arl.org/>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL Calendar

1998

March 19-20	ARL Licensing Workshop Chapel Hill, NC
April 14-15	Coalition for Networked Information Spring Task Force Meeting Arlington, VA
April 15-17	Net '98 Washington, DC
May 12-15	**ARL Board and Membership Meeting Eugene, OR**
June 25- July 2	American Library Association Washington, DC
July 27-28	**ARL Board Meeting Washington, DC**
October 13-16	**ARL Board and Membership Meeting Washington, DC**
October 13-16	Educom '98 Orlando, FL
December 8-11	CAUSE '98 Seattle, WA

1999

February 11-12	**ARL Board Meeting Washington, DC**
May 11-14	**ARL Board and Membership Meeting Kansas City, MO**
July 26-27	**ARL Board Meeting Washington, DC**
October 12-15	**ARL Board and Membership Meeting Washington, DC**

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ARL

A BIMONTHLY NEWSLETTER OF RESEARCH LIBRARY ISSUES AND ACTIONS

197 SPECIAL ISSUE ON MEASURES April 1998

Special Issue:

ISSUES IN RESEARCH LIBRARY MEASUREMENT

by Julia C. Blixrud, Senior Program Officer

Performance measures, quality assessment, public accountability, benchmarking—these have become common words and phrases in higher education and government literature in the 1990s. The environment in which ARL members and many other libraries operate has changed from one of natural acceptance of value by virtue of function to one in which all units must substantiate their worth. This is no easy task. For much of research library history, the functions of building, housing, and making collections available were what libraries were expected to do. Quantitative and extensiveness measures were the means by which libraries were measured. As long-time readers of this newsletter know, ARL has a history of providing descriptive (i.e., quantitative) data about Association members. These data are, in fact, the oldest and most comprehensive continuing library statistical series in North America and are widely used for tracking trends in scholarly communication. Today, those same measures are also often seen as negative pressures on libraries to acquire printed materials in an age when resource sharing and access to electronic information are so prevalent.

Most recently, a Pew Higher Education Roundtable, co-sponsored by ARL and the Association of American Universities, encouraged universities and their research libraries to graduate "from a mindset that accords status and prestige by 'the tonnage model'—the sheer number of volumes and subscriptions a single collection contains." While the Roundtable stopped short of offering an alternative for quantitative measures, it is a vivid example of how ARL's descriptive data, absent any other measures, becomes a double-edged sword.

For the last five years, the ARL Statistics and Measurement Program has therefore been engaged in efforts to investigate new measures. In a 1992 article, "New Directions for ARL Statistics," Sarah Pritchard, then ARL Associate Executive Director, reminded us that, though there is a need to find new ways to assess library performance,"some things are not measurable, are irrelevant or too difficult to measure, or are only meaningful in a local context" (*ARL* 161). Nonetheless, we have not been deterred from continuing our investigation, with the hope of sifting through the possible measures in search of those that are both relevant and meaningful in either a local context or in comparison with other libraries.

This issue provides a snapshot of issues and activities in the area of performance measurement. However, as space and resources limit us from being able to provide a census of all known measurement activities here, the ARL Statistics and Measurement Program has built a website on performance measures, available at <http://www.arl.org/stats/perfmeas/index.html>, in order to more fully account for activities in this area. The site includes a bibliography and links to other information resources on this topic, such as an annotated bibliography originally prepared for those attending a session on performance measures at the April 1997 ACRL National Conference. Readers are invited to suggest additions for the site, especially examples of use

of new performance measures. Plans are also being made to hold an ARL conference on performance measures in the future.

This issue begins with an article by Martha Kyrillidou, Senior Program Officer for Statistics and Measurement, providing a context for the increased interest in performance measures within the higher education community. This article, adapated from ARL's annual publication, *Developing Indicators for Academic Library Performance: Ratios from the ARL Statistics*, also makes recommendations regarding new performance indicators that research libraries might consider.

The article, "In Search of New Measures," emphasizes the need to balance continuing and emerging realities in the assessment of libraries. Written by William Crowe, University of Kansas, and Martha Kyrillidou, this article documents how ARL's Statistics and Measurement Program is responding to the need for new measures while retaining the important descriptive data collection activities that have long served to highlight research library trends.

One area of particular interest is in the measurement of electronic resources. Tim Jewell, University of Washington and ARL Visiting Program Officer, and Julia Blixrud, ARL, describe an ARL project to track institutional and library investments in electronic resources. This project, supported by the Council on Library and Information Resources, has been using ARL's supplementary statistics questionnaire as a testbed to gather data in this emerging statistical area.

Kendon Stubbs, University of Virginia, describes changes made to the interactive website for ARL statistics, hosted by the University of Virginia. He further suggests ways in which these data can be used for local comparative purposes.

Libraries are not the only part of the research institution looking at how best to assess performance; other campus officials are interested, as well. Joan Lippincott, Associate Executive Director, Coalition for Networked Information, describes individual institution efforts to assess networked information services for the CNI measurement project, an outgrowth of the publication *Assessing the Academic Networked Environment: Strategies and Options*.

Much of the activity for performance measures development is taking place outside the North American borders. Amos Lakos, University of Waterloo, attended the second Northumbria International Conference on Performance Measurement in Libraries and Information Services on behalf of ARL this past fall. His report summarizes some of the conference's papers and discussions that included areas to which authors suggested libraries should focus their attention.

ARL continues its exploration of performance measurement for research libraries. The articles presented here are intended to stimulate interest and provide information about these difficult issues. The assessment movement in higher education has been steadily gaining momentum, and several states have already begun linking funding to performance (see "Assessment Policies in Higher Education," *Change* [Mar./Apr. 1998]). We in libraries have been successful in using quantitative and extensiveness measures to differentiate collections and services, justify funding increases, and describe libraries for many years, but comparative effectiveness measures have remained elusive. We must take up the challenge to develop our own measures or they will be determined for us by others.

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An Overview of Performance Measures in Higher Education and Libraries

by Martha Kyrillidou, Senior Program Officer for Statistics and Measurement

An April 4, 1997 article in *The Chronicle of Higher Education* reported that the South Carolina General Assembly approved a law instituting a system in which state appropriations to a public college would be based on how well the institution performs.[1] That action is one of many pieces of evidence that higher education in North America is being pressed for greater accountability and improved attention to quality. Legislators in many states are moving toward performance incentives based, at least in part, on whether universities and colleges are accomplishing stated goals. A public concerned with the balance between costs and benefits of higher education demands more information on institutional operations and outcomes. In particular, there is a great need to demonstrate the extent to which institutions are meeting their goals and objectives, and whether these goals and objectives are aligned with society's needs. A plethora of "useful" measures and other efforts has flooded the literature of higher education. Ultimately, it is the responsibility of each institution to define and describe its own goals, to place them in the context of peer group comparisons, and to demonstrate to the public the position it holds in higher education.

The concepts of accountability and quality assessment in higher education constitute an international phenomenon. National education systems call upon universities to establish performance indicators to measure progress towards the establishment of national goals. Universities increasingly are asked to describe in specific terms their contribution towards the national welfare and the relation between the welfare of a country and university teaching and research. In Europe and Australia, central governments are involved directly in establishing "indicators." In the United Kingdom, for example, quality control, quality audit, and quality assessment are being carried out by the Higher Education Quality Council and the three Higher Education Funding Councils. A new central agency to gather and analyze data, the Higher Education Statistics Agency (HESA), has also been established. More specifically, library performance indicators have flourished in the United Kingdom as the restructuring of the British higher education system proceeds.[2] The European Commission has been supporting an effort to create a reliable statistical base for libraries in Europe. In December 1997, the Commission hosted a workshop to focus attention on statistics that address service quality.[3]

In the U.S., there have been discussions about a greater federal role in institutional accreditation or if such a system might be based on "results" and "performance." Whether it is the federal government or some other entity that will undertake the responsibility to define "quality" for higher education in the U.S., critics of higher education have warned that, if "the academy does not respond, the public appetite for results will expand and crystallize around the use of external performance indicators to measure results. And the jury is still out on the results desired."[4] To some extent, this is already happening through the crude but widespread ranking systems that popular magazines like *U.S. News and World Report* are promoting. In the 1997 issue dedicated to ranking colleges, the editors point out that "the nation cannot afford to let higher education become less and less affordable for more and more students. The high cost of college is no longer just an academic affair; it is a national concern as well."[5]

A recent report that presents the results of a two-year study by the Commission on National Investment in Higher Education highlights the fact that the "present course of higher education—in which costs and demand are rising much faster than funding—is unsustainable." The authors call upon the "nation to address the fiscal crisis now, before millions of Americans are denied access to a college education" and they recommend "increased public-funding of higher education and wide-ranging institutional reforms." In particular, they articulate the following five recommendations:

- America's political leaders—the President, Congress, governors, mayors, and other state and local officials—should reallocate public resources to reflect the growing importance of education to the economic prosperity and social stability of the United States.
- Institutions of higher education should make major structural changes in their governance system so that decision makers can assess the relative value of departments, programs, and systems in order to reallocate scarce resources.
- As part of the overall restructuring, colleges and universities should pursue greater mission differentiation to streamline their services and better respond to the changing needs of their constituencies.
- Colleges and universities should develop sharing arrangements to improve productivity.
- It is time to redefine the appropriate level of education for all American workers in the 21st century. All citizens planning to enter the workforce should be encouraged to pursue—as a minimum—some form of postsecondary education or training.[6]

To some extent, these recommendations are the result of a fundamental societal transformation from the

Industrial Age to the Information Age and the corresponding challenges and opportunities it presents for higher education. Performance measures are becoming the method of choice to track for the transformation of higher education. Critics are calling for the development of a compelling vision for learning in the 21st century, a vision that would transform higher education by realigning it with three conditions: "1) the changing nature of information, knowledge, and scholarship; 2) the needs of individual learners; and 3) the changing nature of work and learning."[7]

In the discussion regarding performance indicators in the U.S., the primary focus has been on cost efficiency and access to undergraduate education as well as on the long-term transformation of higher education and its effect on graduate education and research. There is a real push for higher education institutions in the U.S. to be judged by a direct, observable connection to the country's economic welfare. Contemporary indicators that point toward this trend are: a stronger emphasis on scientific and technical education; efforts towards better management of the intellectual property produced at universities; investments in the Next Generation Internet (NGI);[8] private initiatives, like Internet2;[9] and the privatization of the National Information Infrastructure (NII).

Performance Indicators in Academic Libraries

Academic research libraries also feel the pressures that have resulted from the shift from a management system accustomed to increased revenue and growth to systems that demand more evidence of efficiency and effectiveness, accompanied by fundamental transformations. A 1992 study conducted by The Andrew W. Mellon Foundation analyzed the economic trends of research libraries in the context of the larger academic and publishing trends and identified historical and technological challenges that affect and transform academic libraries.[10] The Mellon study found that the explosion in the quantity of desirable published material and a rapid escalation of unit prices for those items jeopardizes the traditional research library mission of creating and maintaining large, self-sufficient collections for their users. The study also recognized the potential of information technologies to transform the ways libraries organized collections and services. Updates of these trends are charted and presented through the annual publication of *ARL Statistics*.[11]

As in higher education, libraries have also recognized the need for "output and performance measures." ARL responded to these calls by including data on circulation, instructional sessions, and reference transactions, together with interlibrary loan and document delivery statistics in the supplementary portions of *ARL Statistics*. Despite some concerns about the validity and reliability of such measures, these measures were added to the main *ARL Statistics* in 1995. In 1994, ARL also began distributing an annual report on selected ratios.[12] Efforts here are developing, in both senses of the word, i.e., they are still primitive *and* under development.

Institutional data collected through the *ARL Statistics* have also been packaged into an electronic publication that offers interactive statistical analysis through which one can compute any conceivable ratio or performance indicator based on the data of the collected variables.[13] The interactive electronic edition of the *ARL Statistics*, prepared by the Geospatial and Statistical Data Center at the University of Virginia, can best be described as a basic decision support system (DSS) that can answer questions managers may have at the cross-institutional level, for instance, by comparing the performance of one institution to another or to a peer group through a variety of simple (ratio analysis) or complex (multivariate analysis) statistical techniques (see Kendon Stubbs' related article).

In addition to ARL's efforts, there have been a number of projects by other organizations that have tried to develop indicators or "benchmarks" for academic library operations, oftentimes within a larger institutional framework. It is important that, as such library indicators are developed, they address the strengths and weaknesses of the different measures.

Two important activities are taking place at the international level. One that does not limit itself to academic libraries is the work done through ISO 11620, a recently approved international standard on Library Performance Indicators.[14] It specifies a set of 29 indicators grouped in the following areas: (a) user satisfaction; (b) public services, which includes general indicators as well as specific indicators on providing documents, retrieving documents, lending documents, document delivery from external sources, inquiry and reference services, information searching, and facilities; and (c) technical services, including indicators in the area of acquiring, processing, and cataloging documents. Notable points in this proposed standard are its initial emphasis on user satisfaction; its inclusion of cost-effectiveness indicators; its clear and distinct way of describing each indicator, accompanied by suggestions regarding the methodology to be used in collecting the data; and a description indicating how to most accurately interpret each indicator.

Related to the ISO 11620 effort, but with a special emphasis on academic libraries, is the International Federation of Library Associations and Institutions's (IFLA) development of international guidelines for performance measurement in academic libraries.[15] Seventeen select indicators are identified, with an emphasis on indicators that could be applicable internationally to all types of academic libraries, concentrating on measuring effectiveness (but not cost-effectiveness).[16]

Both ISO 11620 and the IFLA guidelines are important works that bring attention to the issue of library performance

measurement at the international level with an aim to promote acceptance of performance measurement. However, both efforts tend to emphasize indicators that require special effort to be collected, and, although they are useful in making historical comparisons within a library as long as the individual library's policies do not change, their usefulness is limited at the cross-institutional level since local policies (such as loan periods, number of books authorized for borrowing simultaneously, differing policies for different constituencies—students, graduate students, faculty, etc.) invalidate such comparisons.

An ambitious effort undertaken by the National Association of College and University Business Officers (NACUBO) aims to develop benchmarks for 39 functional areas in universities.[17] The "library" is just one of the 39 "functional areas" for which data were collected and is sandwiched between "legal affairs" and "mail room." ARL advised NACUBO on the development of the library portion of the survey and, as a result, the NACUBO library survey is almost a duplicate of the ARL survey. Unfortunately, some have taken the data collected by NACUBO as "indicators of efficiency" and "best practices," even as indicators of "quality," despite ARL's long-standing caution against such interpretations. Ratio analysis, which is the way most of the results were reported by NACUBO, is not benchmarking and does not *answer* questions; ratios of this sort provide a basis upon which to *ask* questions.

Another organization conducting performance measurement initiatives is John Minter Associates. Their efforts to develop indicators in colleges and universities are built upon the Integrated Postsecondary Education Data System (IPEDS) and thus are published with the same delay that afflicts IPEDS surveys. *Academic Library Statistical Norms 1994* is the latest of a series of publications issued by Minter since 1988 using the biennial IPEDS Academic Libraries datafile to report 101 "measures" on academic libraries. The publication reports ratios for different types of libraries in groups that are based on the Carnegie Classification System. The authors, however, understand the limitations of ratio analyses and clearly point out in the 1992 introduction that "each comparison takes on meaning only in light of management goals. Does the measure exceed, meet, or fall short of the desired goal? Why? In the absence of a stated goal the question then becomes, 'Is the position of this measure where we wish it to be? Why?' Operating measures are not of equal importance nor of the same importance to different institutions. It is unlikely that an institution will give equal consideration to all 101 measures. Institutional context and administrative vision are two reliable guides to the importance of particular measures. Over time, the focus on particular measures will shift as goals are achieved and institutional context changes."[18]

To protect the confidentiality of individual institutions, both Minter and NACUBO report ratios for groups of institutions. Non-disclosure of institutional data works against the understanding of data anomalies and the subsequent correction of reported errors. Although ratios may be misinterpreted by those who are not familiar with an individual institution's goals and circumstances, there is a value in disclosure. The challenge of a disclosure strategy involving individual institutional data entails investment of effort in educating the public, legislators, and university administrators about how to interpret numbers related to libraries and other higher education functions.

Factors Affecting the Reliability and Validity of Data

There are at least three major issues that need to be taken into account in assessing the reliability and validity of data generally and of academic library data in particular: consistency across institutions and through time; ease vs. utility in gathering data; and values, meaning, and measurements.

Consistency

Lack of consistency in the way data are collected from institution to institution and in the way data are collected over time within the same institution creates problems for describing cross-sectional comparisons and time-series trends. With no processes in place to guarantee compliance with standard definitions, comparability of data across institutions may legitimately be questioned. The existence of the extensive "Footnotes" section of the *ARL Statistics* publication testifies to the importance of recognizing the limitations of reported data.

One possible way to overcome inconsistencies from institution to institution is to develop standards for reporting data across common automated systems, such as those that have been developed in higher education for transferring student records. In order to develop parallel applications for libraries, at least to the level of sophistication that exists for student records, concerns such as the confidentiality and privacy issues related to patron records and Internet transaction logs will have to be addressed.

Ease vs. Utility

Performance indicators are being developed from data that can be easily gathered. Of course, what is easy to measure is not necessarily what is desirable to measure. It is always tempting to set goals based on the data that are gathered, rather than developing a data-gathering system linked to assessing progress towards meeting established goals. For example, ARL's ratios report lists thirty ratios that are derived from the existing data that ARL collects on an annual basis. Because the ARL data reflect the historical and traditional roles of academic libraries, the ratios calculated and printed in this report

are primarily *input* indicators—related to levels of staffing, collections, and expenditures. The difference between these ratios and the raw data published in the *ARL Statistics* is that certain ratios can reflect advancement towards specific, local objectives. The ratios can be viewed as supporting tools to assess progress towards achieving a certain objective, but the final judgment about the importance of a specific indicator must also take into account environmental factors that are part of the local institutional culture.

Values and Meaning

There is a danger of blurring the distinction between the value system that is reflected in certain indicators and the indicators themselves. For example, in developing a system of measures to track library performance regarding the cost of serial subscriptions or of monographs, there are certain values behind the numbers that can be fundamentally different from library to library. These values and the interpretation of the measures therefore may have meaning only in the context of local circumstances. For example, a low unit cost for serial subscriptions may be extremely important for one institution, while another may assert that high-quality service can be guaranteed only by acquiring the most costly scientific and technical journals, thus yielding a higher unit cost per serial subscription.

Another ratio that is often calculated is library expenditures per student or faculty: Does the library that spends more per student or per faculty offer better service? Or is this a sign of inefficiency? What is the relationship between library spending levels, usage, and educational achievement or user satisfaction? The data ARL collects *cannot* answer the latter questions; the meaning and value assigned to these ratios must be developed locally. Thus, one of the limitations of this approach is the absence of an interpretation for each indicator.

The movement calling for performance indicators—which appears to be a near-universal phenomenon—derives in part from the need to define a value system for higher education in an era of unprecedented change and technological innovation. As ARL further explores institutional value systems and establishes measures that reflect these values, the Statistics and Measurement Program hopes to be better able to define and measure quality in higher education and in academic and research libraries. As a first step, the ratios that ARL publishes can serve a dual purpose, although a limited one:

(a) to identify whether a relative position in the rankings for a ratio is that expected and desired for an institution, and

(b) to compare an institution against its peers, especially over time.

ARL's previously mentioned electronic edition of the annual statistics allows a reader to move beyond those thirty ratios published by ARL and calculate interactively any conceivable ratio among the ARL data elements.

Recommendations for Research Libraries

In addition to the data currently collected in the *ARL Statistics*, it would probably be useful for ARL libraries to start adopting some cross-institutional performance indicators from the recently approved ISO 11620 standard and the IFLA guidelines. The major advantage of the indicators proposed through these sources is that there is a standard interpretation for them regarding the value of services. In particular, at the cross-institutional level ARL libraries can identify those indicators from the above sources that are impervious to variations in local library policies and explore their usefulness.

From the list of twenty-nine indicators in the ISO 11620 standard and the seventeen indicators listed in the IFLA guidelines, the following performance indicators could be easily adopted by ARL institutions:

(a) The IFLA guidelines define market penetration or percentage of target population reached as the proportion of the library's potential users who actually use the library.[19] Although it would be more difficult to get an overall use measure of the various services (e.g., reference, circulation, in-house use), it should be relatively easy for a library to calculate with their online circulation system the extent of their circulation services' market penetration for each primary user group—faculty, graduate students, and undergraduates. Most ARL libraries, then, should be able to easily adopt such a "market penetration of circulation" measure.

(b) Although less important than market penetration and recognizing that ARL libraries have a strong archival function, collection turnover or collection use would be a useful indicator. The IFLA guidelines suggest combining the number of loans within a year and the number of in-house uses (which can be problematic for those libraries that do not keep in-house use statistics). However, the ISO 11620 standard restricts the definition of this indicator to the number of registered loans in a specified collection divided by the total number of documents in the specified collection, ignoring in-house use. Also, to control variations in the loan period that would affect renewal numbers, it might be advisable to restrict the total number of loaned items to the number of initial loans, excluding renewals.

(c) Extremely important, although not as easily applicable, is the measurement of user satisfaction as a performance indicator. Its applicability across institutions needs to be further explored given the variations in the services provided by each library, but it is nonetheless a critical indicator of whether users' expectations are satisfied or not. Both the

IFLA guidelines and the ISO 11620 standard recommend a five-point scale and suggest measuring both general user satisfaction as well as satisfaction with specific service areas. The IFLA guidelines describe the process of measuring user satisfaction in more detail and recommend a combination of satisfaction and importance that can help decision-making and action-taking; furthermore, the measurement of user satisfaction is not only recommended with local services, but also with services offered for remote use.

Librarians may not feel entirely comfortable undertaking such initiatives on their own, but there is a very strong influence towards this direction, partly coming from user-centered management practices. The ARL Statistics and Measurement Program has been providing workshops that familiarize librarians with the various aspects of the user survey research process, aiming to either help them initiate such activities on their own or to work effectively with consultants. A number of ARL libraries have been systematically applying results obtained from user satisfaction surveys when implementing changes and charting new directions for their organizations. GraceAnne DeCandido describes the results of such efforts in ARL libraries in an ARL SPEC publication entitled, *After the User Survey, What Then?*[20]

Lastly, it should also be pointed out that work is underway in the area of performance indicators for the electronic library. ARL efforts to date have concentrated primarily on measuring the monetary investments libraries make in electronic resources. Current work by Timothy Jewell, University of Washington, who analyzed data collected through the *ARL Supplementary Statistics* (an experimental testbed for new measures), has documented a clear trend of increasing investments in electronic resources that indicates ARL libraries invested about 7% of their materials budget in electronic resources in 1995-96.[21]

Other efforts that have emphasized a more general evaluation of the academic network environment and information services of universities include *Assessing the Academic Network Environment*, by Charles McClure and Cynthia Lopata,[22] and *Management Information Systems and Performance Measurement for the Electronic Library: eLib Supporting Studies*, by Peter Brothy and Peter W. Wynne.[23] Overall, there is general agreement that all these efforts attempting to define indicators for electronic resources and services are at the early stages of development and much more work needs to be done before meaningful cross-institutional comparisons can be made.

[1] Peter Schmidt, "Rancor and Confusion Greet a Change in South Carolina's Budgeting System," *The Chronicle of Higher Education* (4 Apr. 1997): A26.

[2] See, for example, Ian Winkworth's, "Performance Indicators," in *Librarianship and Information Work Worldwide* (Graham McKenzie and Ray Prychirch, eds., London: Bower Saur, 1993: 171-191).

[3] An executive summary of the workshop can be found at: <http://www2.echo.lu/libraries/en/statwks.html>.

[4] Gerald Gaither, Brian P. Nedwek, and John E. Neal, *Measuring Up: the Promises and Pitfalls of Performance Indicators in Higher Education*, ASHE-ERIC Higher Education Report No. 5 (Washington, DC: George Washington University, Graduate School of Education and Human Development, 1994), v.

[5] *America's Best Colleges* (Washington, DC: U.S. News & World Report, 1996), 11

[6] Council for Aid to Education, *Breaking the Social Contract: The Fiscal Crisis in Higher Education*. Online. Rand Corporation. Available: <http://www.rand.org/publications/CAE/CAE100/index.html>. 3 April 1998.

[7] Michael G. Dolence and Donald M. Norris, *Transforming Higher Education: A Vision for Learning in the 21st Century* (Ann Arbor, MI: Society for College and University Planning, 1995): 22.

[8] *FARNET's Washington Update*, November 7, 1997 issue, informs us that NGI's recent success in garnering $95 million will be allocated on Internet issues relevant to each agency's "particular expertise and agency mission—DARPA's focus will be on advanced network research, NASA's on specialized network testbeds, NIST will concentrate on standards development, NSF will continue to cultivate its relationship with the academic community, and the NIH will focus on health care applications." Copies of this newsletter are distributed through <cni-announce@cni.org> and this issue can be retrieved through the cni-announce archives.

[9] <http://internet2.edu/>

[10] Anthony M. Cummings, et. al, *University Libraries and Scholarly Communication* (Washington, DC: Association of Research Libraries, 1992).

[11] Association of Research Libraries, *ARL Statistics* (Washington, DC: Association of Research Libraries). Annual.

[12] Association of Research Libraries, *Developing Indicators for Academic Library Performance: Ratios from the ARL Statistics* (Washington, DC: Association of Research Libraries). Annual.

[13] <http://www.lib.virginia.edu/socsci/newarl/>

[14] ISO 11620, *Information and Documentation–Library Performance Indicators* (Geneva: International Organization for Standardization). To be published June 1998.

[15] Roswintha Poll and Peter te Boekhorst, *Measuring Quality: International Guidelines for Performance Measurement in Academic Libraries* (London: K.G. Saur, 1996).

[16] 1) Market penetration, 2) opening hours compared to demand, 3) expert checklists, 4) collection use, 5) subject collection use, 6) documents not used, 7) known-item search, 8) subject search, 9) acquisition speed, 10) book processing speed, 11) availability, 12) document delivery time, 13) interlibrary loan speed, 14) correct answer fill rate, 15) remote uses per capita, 16) user satisfaction, and 17) user satisfaction with services offered for remote use.

[17] NACUBO, "Benchmarking for Process Improvement in Higher Education: A Prospectus" Coopers and Lybrand with the assistance of Barbara S. Shafer and Associates, FY 1994. Online. Available: <http://www.nacubo.org/website/benchmarking/index.html>

[18] *Academic Library Statistical Norms 1992* (Boulder, CO: John Minter Associates): 2.

[19] *Measuring Quality*, 45.

[20] GraceAnne A. DeCandido, *After the User Survey, What Then?* ARL SPEC Kit 226 (Washington, DC: Association of Research Libraries, 1997).

[21] Timothy D. Jewell, "Recent Trends in ARL Electronic and Access Services Data," a report submitted to the Association of Research Libraries, 1997. Available at: <http://www.arl.org/stats/specproj/etrends.htm>.

[22] <http://www.cni.org/projects/assessing/>

[23] <http://www.ukoln.ac.uk/dlis/models/studies/>

Continued

IN SEARCH OF NEW MEASURES

This article was originally prepared by Martha Kyrillidou, Senior Program Officer for Statistics and Measurement, and William Crowe, Vice Chancellor for Information Services and Dean of Libraries, University of Kansas, for discussion by the ARL Board at their February 1997 meeting.

In 1994, a new strategic objective was adopted by the ARL membership to describe and measure "the performance of research libraries and their contributions to teaching, research, scholarship and community service." This action ratified new directions for the ARL Statistics and Measurement Program to expand beyond measures of "input" (such as collection size, number of staff, expenditures, etc.) and to search for new kinds of measures of library performance and impact. This article documents the progress in meeting this objective.

Old Wine and New Bottles

The seeds for this initiative were rooted in an article by Sarah Pritchard in the March 1992 issue of the ARL newsletter, in which she concluded that, "ARL's active program of statistical analysis, research and management development" must center on "maintaining the useful approaches of the past and exploring responses to the challenges of the present and the future."

In October of 1994, there was an ARL membership program on the topic of performance measures as incentives for redesigning library services. William Crowe, Committee Chair from 1992-96, set the stage for the program by quoting from the then recently released Association of American Universities Research Libraries Project task force reports, which state that "there is no likely substitution of new measures for the old measures, but rather an additive function, a balancing function, as we move in this transition period."[1]

Striking the right balance between measuring the continuing and the emerging realities of the modern research library is at the cornerstone of the ARL Statistics and Measurement Program operations. Research libraries' traditional realities drive the ARL measures of printed collections, budgets, and staffing. The emerging realities drive ARL's agenda to seek credible indicators of the steady growth and high demand for the complex mix of new services, consortial arrangements, electronic information, the influence of the Internet, and the ways in which students and faculty interact with each other and these newer channels of information.

Emerging Realities and New Trends

When exploring emerging realities, the first challenge is to pose the questions that most need to be answered in order to describe the transformations underway. How much do libraries spend on electronic resources? On consortia? Electronic serials? Computer hardware and software? On digitization for preservation? Interlibrary loan and document delivery? Are these expenditures made with funds diverted from traditional budget lines or are they newly appropriated funds? How many libraries are offering "innovative" services? Does the availability of any new services have implications on library use or performance? For example, in libraries that provide electronic reserves or user-initiated interlibrary loan, has use of the services increased faster than in other libraries and/or are the materials available to users faster and/or at less cost? The Program has taken steps to address these issues. A planning document was presented and ratified at the October 1995 membership meeting.[2] The Program has also been successful in attracting external funding and talented Visiting Program Officers to help refine these questions.[3]

Although there is a better understanding of the questions that need to be asked in this changing environment, the answers continue to be elusive and/or unstable. For example, Timothy Jewell's analysis confirms that data being collected about electronic resources expenditures show that most ARL libraries are spending a relatively small portion of their budget on electronic resources.[4] Although this portion is increasing rapidly, the change is not consistent from year to year nor from member library to member library.

The challenge, then, is not in describing any single change, but rather to develop quantifiable trend analysis in multiple institutions that can be executed from year to year in a consistent way. There is an often unarticulated assumption that change in libraries is moving in one direction. However, data from ARL libraries indicate thus far that change seems to be happening in rather haphazard and chaotic ways, both within individual libraries and across institutions. Some leaders suggest that it is the *rate* of change creating confusion rather than change itself.

To illustrate the complexity of tracking the emerging realities of research libraries and this rate of change, one need only look back to the early 1990s, when many libraries provided access to bibliographic databases by tapeload to campus mainframes or by stand-alone or networked CD-ROMs. More recently, libraries have begun to provide either gateway or direct access to vendor and publisher full-text databases of journal articles and monographs. Libraries are also integrating access to various electronic information resources through a WWW interface, making it possible for the traditional library OPACs to link to various full-text resources. It has been impossible to provide consistent, quantitative indicators of such trends because of the rapidity of the changes and because they are, by their nature, not comparable to previous measures. We are faced with a series of qualitative revolutions, basic "paradigm shifts" that are changing *what* research libraries do and in many respects are changing *how* research libraries fulfill their mission.

Certainly, this environment is not conducive to identifying consistent measures among 121 research libraries. However, in response to those who seek quick answers to new measures, there have been some ideas, although not a widespread acceptance of them (for example, a screen capture could be considered a potential unit of measurement, similar to a library gate count). Various software "counters" tell us, for instance, how many computers accessed a web page, how many bytes were transferred, and how many sessions were established. Are these useful measures?[5] Some authors argue that they are and have proposed that "a centralized voluntary reporting structure for Web server usage statistics, coordinated by the Association of Research Libraries' (ARL's) Office of Statistics, would provide a significant service to academic librarians."[6]

The User's Point of View

Most libraries are aware of the need to measure not only the use of their resources, but also the effectiveness of their library services. In particular, how are library users benefiting from their interaction with the library? To help address this question, the ARL Statistics and Measurement Program initiated a series of training events to help library staff collect information from their users to better inform their management decisions. In the long run, if higher education wants to measure library "impact" we will need to initiate longitudinal studies, for example, by questioning and tracking individuals from grades K-12 through their undergraduate/graduate study and as alumni in order to assess how their lives and work may have been affected by their library experience.

In the meantime, many libraries have found value in conducting user surveys and using the results to assess current and to devise new library programs and services. Some ARL members have used the same survey instrument, offering a possible opportunity for cross-institutional comparisons. ARL showcased how libraries are making use of user surveys as new measures in a 1997 publication and continues to promote this strategy by offering a workshop on the methodology of user surveys.[7]

The Heritage

A core question that has been posed by some ARL members also helps frame the issue: Should we stop collecting the established annual data series and instead invest all staff efforts in exploring new areas? Is collecting and publishing data on collections, expenditures, staffing, and services holding us back? What is the current value of our investments in the *ARL Statistics*, *ARL Annual Salary Survey*, "Library Expenditures as a Percent of E&G," and *ARL Preservation Statistics*?

Recently, one of the Program's fundamental strategies has been to maximize the usefulness of the annual projects. Thus, from data collected in the *ARL Annual Salary Survey*, Stanley Wilder was able to publish a report on

The ARL Membership Criteria Index

The criteria for academic library membership in the Association of Research Libraries are based partly on quantitative data that provide a view of the range of resources deployed among the existing members of the Association. Statistical analysis shows a high degree of homogeneity in respect to five data categories:

- volumes held
- volumes added, gross
- current serials
- total library expenditures
- total professional plus support staff

Each year ARL uses the statistical method of principal component analysis to identify the commonalities in the membership. The analysis is conducted on the 35 charter members of ARL and produces coefficients, or weights, for each of the five data categories. When the data for a given library are multiplied by the weights and summed, the result is a "score" for that library. This process of multiplying by weights and summing is carried out for each ARL academic library. The resulting scores comprise what is known as the ARL Membership Criteria Index. The term "score" in this context is not a judgment about the library's quality or performance. "Score" is a term from principal component and factor analysis that refers to the summation of data. The ARL index score in effect aggregates the five measures of size and resources. Each year the current year's data in the five categories are published in *The Chronicle of Higher Education*, arranged in descending rank order by the ARL Index scores.

The weights and data categories can also be applied to the data of non-ARL libraries. This technique is one of the tests used to determine potential members of the Association. Candidates for membership are required to have a score on the ARL index scale of at least -1.65 for the most recent four years in order to be considered. This criterion was established to ensure that new members share the essential characteristics of the existing members in regard to the five measures of size. The membership criteria also include other requirements to ensure the homogeneity of the membership. See <http://www.arl.org/stats/qualcov.html> for the complete description of membership criteria and <http://www.arl.org/stats/factor.html> for more information on the membership index.

aging in the library profession and calculated retirement projections.[8] Martha Kyrillidou received permission to study earnings differentials and hierarchical segregation in ARL libraries using the same dataset. Using the *ARL Statistics*, a secondary annual report is published containing thirty selected ratios that ARL directors have identified as useful indicators for examining progress towards local goals and objectives.[9] Maximizing the investments in ARL's annual statistical data has proven a very successful strategy that helps managers develop a better understanding of current trends in their institutions.

ARL Membership Index

When reviewing the ARL Statistics and Measurement Program activities, one cannot escape a discussion of the ARL Membership Criteria Index, one of ARL's most publicized and controversial products (see accompanying sidebar). The Index serves as a measure of the commonality of new members with the founding ARL member libraries. It is a composite measure of volumes held, volumes added gross, current serials, total expenditures, and professional plus support staff. The Index is not a measure of a library's services, the quality of its collections, or its success in meeting the needs of users.

Three out of the five variables that comprise the Membership Index encompass investments in the emerging library realities. For example, "current serials" is a measure that includes not only print journals, but electronic ones as well; "total expenditures" incorporates expenditures for electronic investments; and "staffing" is an essential composition of both the old and the new.

The ARL Membership Index is published by *The Chronicle of Higher Education* every year. A number of voices have called for a stop to the Index, declaring that it fosters a competitive posture in an era of increasing cooperation. The Index is also seen as a threat to resource sharing because it appears to emphasize investments in local collections. Further, it is said to de-emphasize the distinct institutional character of each library. It is perceived as calling those universities that invest most heavily in libraries "winners," implying top, or best ranked, schools.

If ARL membership were not based on the Index, what would take its place? A variety of membership committees have attempted to answer this question, the most recent body submitting a thoughtful report in 1994 proposing to supplement the quantitative membership criteria with qualitative factors that take into account, among other things, investments in electronic resources. In 1995, the membership adopted this proposal to amend the membership criteria. This latest revision does not eliminate the pre-existing quantitative requirements, but allows for consideration of qualitative assessments about the contributions a research library makes to North American learning and scholarship when the quantitiative requirements are marginal.

Striking a Balance

Activities undertaken by the Statistics and Measurement Program include collecting, refining, and making use of the traditional data while simultaneously searching for new measures.

The analyses to date indicate that access measures are best developed locally. Ratios, user survey data, and service transaction data complement the traditional quantitative data in providing an overall picture of library input and output. As the library and its constituent community reach consensus on how to best measure the expenditures, collections, and use of electronic resources, these additional measures can be added to a library's collective dataset, as well.

Our challenge each year is to learn from our experiences how to improve ARL measures. As our members' environment changes, ARL is adjusting program goals and adapting measures to suit the emerging realities of research libraries. Douglas Bennett, President, Earlham College, and former Vice-President of the American Council of Learned Societies, was invited to comment on ARL's search for new research library measures. He noted that "we need goals in order to measure progress toward them, but at present we do not have adequate goals, or ultimate goals, with regard to what universities [and libraries] should do." He further cautioned the library community to "avoid premature closure. Keep experimenting because we are unlikely to settle into comfortable grooves anytime soon."[10]

[1] *Proceedings of the 125th Membership Meeting*, Association of Research Libraries, 1996. p. 35.

[2] see <http://www.arl.org/stats/program/planning.html>

[3] For example, the Council on Library and Information Resources and the University of Washington are supporting Timothy Jewell in an examination of the investment made by research libraries in electronic resources. The Andrew W. Mellon Foundation funded Mary Jackson's two-year study of interlibrary loan performance. Jan Merrill-Oldham, Harvard University, led a project to revise the ARL Preservation Statistics Survey to begin to collect data on digitization for preservation.

[4] *Recent Trends in ARL Electronic Access Services Data*. Available at <http://www.arl.org/stats/specproj/etrends.htm>.

[5] Chen, Paul. "Hit-or-Miss Measurement." *Marketing Tools*. (Mar. 1997): 22-25.

[6] Hightower, Christy, Julie Sih, and Adam Tilghman. "Recommendations for Benchmarking Website Usage Among Academic Libraries." *College and Research Libraries* (Jan. 1998): 61-79.

[7] GraceAnne A. DeCandido. Julia C. Blixrud, Ed. Advisor. *Transforming Libraries 4: After the User Survey, What Then? (SPEC 226)*. September 1997. This publication is also available online at: <http://www.arl.org/transform/us/index.html>.

[8] Wilder, Stanley. *The Age Demographics of Academic Librarians: A Profession Apart*. Washington, DC: Association of Research Libraries, 1995.

[9] *Developing Indicators for Academic Library Performance: Ratios for the ARL Statistics*. ARL annual report.

[10] *Proceedings*, 33.

Interactive Peer Group Comparisons Through the Web

by Kendon Stubbs, Deputy University Librarian, University of Virginia

A newly revised ARL Statistics site on the World Wide Web offers interactive comparisons of academic ARL libraries, expressed both in numbers and in graphs. The site makes available the ARL data from 1962-63 through the latest year, 1996-97. The median, average, high, low, and other statistics can be displayed for any variable of any academic library or group of libraries for the past 35 years. Users can also select data from Canada or by census regions of the U.S. The URL for the site is: <http://www.lib.virginia.edu/socsci/newarl>. The site is also available through the ARL homepage at <http://www.arl.org/stats/arlstat/index.html>.

In addition to displaying raw data from the annual *ARL Statistics* publication, the web pages also allow users to create ratios between any two data categories or variables. Thirty selected ratios are already published each year in ARL's annual printed publication *Developing Indicators for Academic Library Performance: Ratios*, but with the website it is possible to compute and display individual library data for close to 2,000 ratios, many of which may be of considerable interest in benchmarking or measuring library performance.

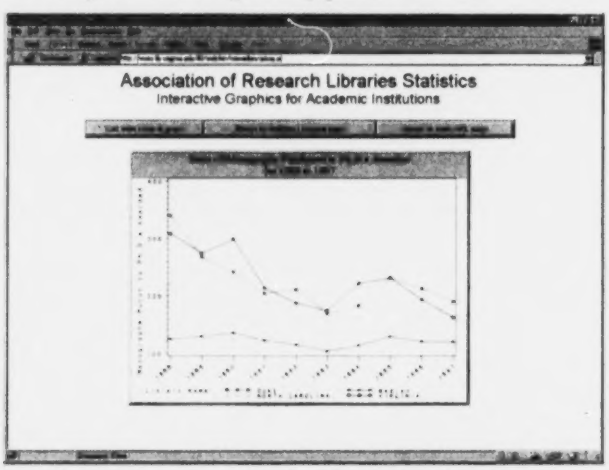

Figure 1: Interactive Graphics for Academic Institutions

For example, one could click on "Interactive Graphics" and then on graphs for multiple libraries to create comparative charts. For Duke University, the University of North Carolina, the University of Virginia, and the median ARL library, one could graph the ratio of purchased monographs to Ph.D.s awarded for the last 10 years. Figure 1 shows the resulting graph. At a glance, one can see that at Duke and Virginia monographic acquisitions per Ph.D. are lower than they were 10 years ago, while at North Carolina they are higher, but that all three libraries provide more monographs per Ph.D. degree than the median ARL library.

Time series data for individual libraries can also be displayed on the Web. For example, Figure 2 shows the ratio of materials expenditures per graduate student for the past five years for three libraries plus the ARL median library.

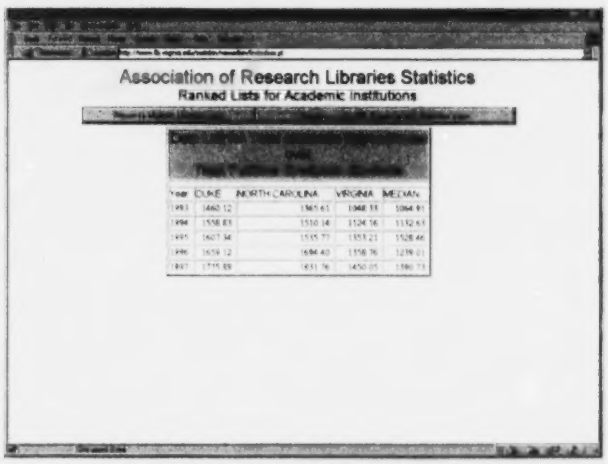

Figure 2: Ranked Lists for Academic Institutions

Also available on this site are ranked lists for all of the ARL data variables and for the 2,000 possible ratios. In addition to the ranked data published in the printed *ARL Statistics*, website users can create rank-order tables for variables such as computer files, circulations, student assistants, etc., or for ratios such as total staff to volumes held or to circulations, interlibrary borrowing to purchased serials, operating expenses to total staff, etc.

Further, this site offers 12 years of the ARL Membership Criteria Index scores and ranks, as well as the data on which the Index is based. A click of the mouse in this section lists or graphs the Index data for any ARL member library.

Finally, the last five years of ARL statistics can be downloaded from the website in ASCII or .wk1 formats (for use with Microsoft® Excel or Quattro® Pro applications).

The ARL statistics represent the oldest continuing library statistical series in North America, and serve as a comprehensive resource on trends in academic and research libraries. The website statistics provide users with an opportunity to conduct analyses and create data subsets of academic research library statistics to address local needs.

The ARL Statistics site is maintained by the Geospatial and Statistical Data Center of the University of Virginia Library (formerly called the Social Sciences Data Center).

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Continued

UNDERSTANDING ELECTRONIC RESOURCES AND LIBRARY MATERIALS EXPENDITURES: AN INCOMPLETE PICTURE

by Julia C. Blixrud, Senior Program Officer, and Timothy D. Jewell, Electronic Resources Coordinator, University of Washington Libraries

Questions asked both of ARL generally and of ARL member libraries individually are: How much are research libraries spending for electronic resources collectively and how much on average? How does an individual institution's expenditures for electronic resources compare with other research libraries? Such questions are to be expected as libraries move into a digital environment, but simple and credible answers remain elusive. Since fall of 1996, and with the support of the Council on Library and Information Resources and the University of Washington Libraries, the ARL Statistics and Measurement Program has been exploring the character and nature of library investment in electronic resources in order to develop standard definitions to more systematically collect information about the transformation of research library collections. Timothy D. Jewell has been serving as a Visiting Program Officer for the project by analyzing data from ARL's main and supplementary surveys and by talking with member libraries about how to measure the investment being made in electronic resources.

ARL has had a supplementary statistics questionnaire since 1984. This survey serves as a testbed for developing questions and for gathering new forms of data. Questions asked on this survey can be subsequently added to the main statistics survey, dropped from consideration due to an inability to collect reliable data, or modified over several years while determining the best means by which to ask them. The reports from the supplementary statistics survey are not generally published because, due to their experimental nature, the results are not considered sufficiently reliable. They are, however, made available to member libraries for their information. Data on expenditures for electronic resources were first requested as part of this testbed survey in 1992-93, with questions on expenditures for (a) computer files and

ELECTRONIC RESOURCES AND ARL LIBRARY MATERIALS EXPENDITURES, 1992/93–1995/96

	1992–1993	1993–1994	1994–1995	1995–1996
Computer File Expenditures				
Total	$14,147,625	$20,132,553	$22,030,727	$24,609,821
Average	$172,532	$236,854	$249,286	$253,709
Median	$148,158	$212,936	$226,318	$210,890
Electronic Serial Expenditures				
Total			$11,847,577	$15,170,972
Average			$188,057	$174,379
Median			$156,754	$148,166
Electronic Resources Expenditures (total of above)				
Total	$14,147,625	$20,132,553	$33,878,304	$39,780,793
Average	$172,532	$236,854	$349,261	$364,961
Median	$148,158	$212,936	$278,404	$301,992
Library Materials Expenditures (for respondents)				
Total	$393,271,073	$425,287,651	$489,664,539	$571,145,986
Average	$4,795,989	$5,003,384	$5,380,929	$5,654,911
Median	$4,242,887	$4,527,122	$4,714,384	$4,975,353
E-Resource $ as Percent of Library Materials Expenditures	3.60%	4.73%	6.92%	6.97%
N= (of 108 Academic ARLs through 94-95, 109 in 95-96)	82	85	97	101

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search services; (b) document delivery/interlibrary loan; (c) computer hardware and software; and (d) bibliographic utilities, networks, and consortia. A fifth question on expenditures for electronic serials was asked beginning in 1994-95.

The 1992-93 question on expenditures for "Computer Files and Search Services" was defined to collect data on "expenditures for software and machine-readable materials considered part of the collections, whether purchased or leased," and expenditures for online database searches. It excluded expenses for library system and staff software, and for "bibliographic utilities, networks and consortia," and, according to the instructions, only those expenses that would have been counted in the main ARL Statistics survey as part of expenditures for "Other Library Materials or Miscellaneous" were to be included. In 1994-95, the question on "Expenditures for Electronic Serials" was added, covering subscriptions whose primary format is electronic. The instructions stated that only those expenses that would have been reported in the main ARL Statistics survey as part of "Current Serials" were to be included.

Overall, there was a reasonably good (and improving) response rate for these questions, with 82 of the 108 academic ARL libraries (Academic ARLs) providing a non-zero figure for the "Computer Files and Search Services" in 1992-1993, and 101 of 109 providing a non-zero response for either or both of the questions in 1995-1996. The responses themselves ranged widely, with some very large figures reported. Although no responses were excluded on this basis, both average and median figures are provided in the accompanying table for better understanding of the data. As can be seen, the reported amount spent on computer files increased more than $10 million overall between 1992-1993 and 1995-1996. When expenditures for electronic serials are added for the last two years, the total of what can be called "electronic resources" nearly tripled from more than $14 million in 1992-1993 to nearly $40 million in 1995-96. The average and median figures have both doubled in that period. The percentage of "Library Materials Expenditures" devoted to electronic resources, although still modest, has almost doubled, from 3.6% in 1992-1993 to nearly 7.0% in 1995-1996.

Mr. Jewell's project has confirmed that these figures underestimate the actual expenditures by some unknown amount. The reasons stem from the difficulty in finding adequate definitions to collect data in a standard and comprehensive way when libraries are employing a wide variety of funding and budgeting strategies to acquire electronic resources. For instance, the largest jump in reported expenditures occurred in 1994-1995, when the question on electronic serials expenditures was introduced. This suggests that actual library expenditures for the prior two years were higher than reported. In addition, after having thoroughly reviewed the survey questions' intent, and by reviewing one institution's responses and consulting with other librarians, Mr. Jewell concludes that local record-keeping practices made it difficult to respond to the question accurately and that, as a result, many investments in electronic resources may have been understated. It also seems likely that some expenditures in this area are actually being paid out of a library's operations funds, which would theoretically not be reported in either question (this suggestion was endorsed by several people who attended an ARL survey coordinator meeting), and possibly being paid out of "Consortial and Network Expenditures." Beyond this, several ARL library survey coordinators confirmed that their libraries provide access to resources that are purchased on behalf of their institutions by a state-funded consortium, and that these expenditures also go unreported in the ARL Supplementary Statistics survey. Based on these findings, Mr. Jewell revised the 1996-97 ARL supplementary questionnaire to try to capture those figures that had been elusive in previous surveys. Preliminary reports indicate that this year's results will show a significant increase in total electronic resource expenditures.

In Mr. Jewell's analysis of the 1992-93 to 1995-96 survey data, he identified several other trends regarding the data that member libraries were reporting. A full report was sent to each ARL member library as part of the Report on the 1995-96 ARL Supplementary Statistics and is also available at <http://www.arl.org/stats/specproj/etrends.htm>. After consulting with the ARL Statistics and Measurement Committee and ARL survey coordinators, as well as with other individuals and groups through meetings and presentations, several questions were revised for the 1996-97 Supplementary Statistics Survey. Data from that survey is currently being collected and analyzed. A copy of the survey is available at <http://www.arl.org/stats/sup97/survey.htm>.

Mr. Jewell's investigation of data on research library expenditures for electronic resources confirmed that existing data is neither comprehensive nor comparable from one library to another. The revised questions on the 1996-97 ARL Supplementary Statistics survey are expected to yield a more comprehensive picture of library expenditures for electronic resources. However, the picture will remain incomplete until definitions are resolved and practical techniques are developed to ensure accurate and consistent reporting. In the meantime, the ARL Statistics and Measurement Program will continue to monitor this and other measures to track how research libraries are responding to the digital environment.

ASSESSING THE ACADEMIC NETWORKED ENVIRONMENT

by Joan Lippincott, Associate Executive Director, Coalition for Networked Information

How are libraries thinking about assessment in the networked environment? Is progress being made in measuring the impact of the availability of networked information resources and services? Is any attempt being made to demonstrate the impact that the investment of many hundreds of thousands of dollars has made on the improvement of access to information by those in the university community?

Seven institutions are participating in a Coalition for Networked Information (CNI) project on assessment, which was developed as an outgrowth of the publication *Assessing the Academic Networked Environment: Strategies and Options*, by Charles McClure and Cynthia Lopata (CNI, 1996). The manual describes the challenges of assessing networks and networked services and offers guidance on approaches to developing measures. The authors describe sample measures in a variety of areas. The institutions participating in the CNI project chose areas of assessment for their particular campus and developed measures using the McClure/Lopata manual as a starting point.

Several of the participating institutions tested measures related to library and information resources and services as part of the CNI project. Their initiatives are tailored to the needs of their own institutions, have distinct flavors, and employ a range of assessment techniques. While the first round of implementation of measures is not complete on all campuses, the following summaries of several of the efforts provide information on the kinds of topics the libraries are measuring and report some of the initial findings.

Reports from each of the institutions' initiatives and supporting materials, including in many cases the surveys and other instruments used, are available on CNI's website at: <http://www.cni.org/projects/assessing/>.

University of Washington

The University of Washington has an ambitious program of assessment initiatives, including redesigning their triennial library use survey to include a focus on networked information, continued development of evaluation methods for the UWired teaching and learning program, and an examination of faculty and graduate student information use.

The UWired assessment plan is a collaborative effort of the Undergraduate Education, University Libraries, and Computing and Communications departments. Evaluation efforts include the use of a variety of techniques, including printed surveys, web-based surveys, e-mail questionnaires, and focus groups.

DATA ON USE, QUALITY, AND COSTS OF NETWORK SERVICES

Christopher Peebles, CNI Visiting Fellow and Associate Vice-President and Dean of Information Technology at Indiana University, has developed an impressive set of survey data that describes use and user satisfaction with an array of services, including IT user support, hardware and software, and e-mail. The materials he uses in his presentations are available at: <http://www.indiana.edu/~ucsdcas/jm/>.

To view nine years of Indiana University IT quality surveys, visit: <http://www.indiana.edu/~uitssur/>.

To view the Activity Based Cost data for the central IT organization at IU visit: <http://www.indiana.edu/~ucs/business/scindex.htm>

To determine how faculty and graduate students in the biological sciences are using information for their research and teaching activities, the University of Washington team is conducting focus group sessions structured around three areas:

- How users identify, obtain, and use information for research and teaching activities.
- The ways users would ideally like to get information they need and why.
- The use of and perceived tradeoffs associated with electronic journals.

The team identified enablers and obstacles to their work. Enablers included strong support from the administration for some of the assessment work, previous experience with surveys and data analysis, and the high priority placed by staff on this work. Obstacles included the difficulty of developing effective performance measures in a very dynamic and complex environment, the time-consuming nature of most assessment activities, and the difficulty in getting usage statistics from vendors of information products.

The University of Washington is also taking advantage of the services offered by the Flashlight Project (see box on page 15).

Virginia Tech

The "moving target" of networked information measurement is also an issue on the Virginia Tech campus. In her report on the project, Dean of University Libraries Eileen Hitchingham writes, "We look at the changing realities of a few months ago to make best guesses about why things are happening today, or to better understand what might happen in the near future. The perspective is speculative, not conclusive. Still, making guesses from some information seems better than working with no information."

The Virginia Tech assessment measures included a

student survey that was developed by a number of campus units, including the library. Staff asked students to describe their use of links on the library's main web page. Students reported use of the electronic reserve system, institutional library catalog, regional and special library catalogs, and list of database resources. For this group of students, use of the library's more than 100 electronic journals was disappointingly low.

Two of Virginia Tech's measures addressed the physical location of students and others using library and information resources. The survey found that many of the students visited the library in person as well as used the resources through remote network connections from dorm rooms, off-campus housing, etc.

In a study that included a review of web log data, the team examined where users were located when connecting to the library web pages and determined that less than half were inside the actual library. An intensive analysis of the use of library web pages was difficult given the many changes taking place with the pages during the short period of time the log data examined. Also, the fact that different library network services reside on different servers made collecting data difficult. However, understanding where users are physically located when using networked information resources has implications for providing services and instruction for library users and is useful for future planning.

Gettysburg College

At Gettysburg College, the assessment project focused on the use and cost-effectiveness of the Electronic Reserves System. The Electronic Reserves System is part of a broader Curriculum Navigation Project (CNAV) that provides a central source of information for the campus. Via CNAV, students can access information about their courses, including class rosters, course homepages, course syllabi, and electronic reserves. Access to electronic reserves materials is restricted to those enrolled in the course.

Through both telephone and electronic surveys, Gettysburg assessed why students used or did not use the electronic reserves system, determined usage patterns, and examined both faculty and student satisfaction with the electronic reserves system.

As was evident at Virginia Tech, many students access library resources from their dorm room if that access is available; well over half of the Gettysburg students using the electronic reserves system did so. Most students found the system to be convenient and easy to use.

Faculty were enthusiastic about the electronic reserves system because of the added value it brought to their courses. In particular, they valued the ability to easily make available current materials to students enrolled in their classes, and they liked the capability of allowing many simultaneous users to access course reserves, since that is the frequent pattern of use of such materials. In addition, they liked the reports they received documenting what portion of the class actually accessed each reserve item and how many repeat uses of items were recorded.

As one faculty member stated, "I truly believe that my students had access to more timely and accurate literature through using electronic reserves.... Electronic reserves helps me do a better job of providing good readings to my students as well as monitoring their use of them." Another wrote, "[Electronic reserves] provided all students with instant and continuing access to course materials. Electronic access far outstrips the traditional reserve system for providing access, especially in a high enrollment class. Also, some reserves were... needed for long-term access."

The Flashlight Project

The Flashlight Project, headed by Steve Ehrmann of the TLT Group, provides a suite of evaluative tools, training, consulting, and other services. The work is based on the Flashlight Current Student Inventory™ (CSI), which can be used to collect facts and opinions from currently enrolled students. The CSI is a tool kit of almost 500 indexed questions that can be used to draft surveys, questionnaires, and protocols for interviews and focus groups.

Sample Flashlight questions and a more detailed description of the CSI are posted at: <http://www.wiche.edu/flshlght/flashinv.htm>.

King's College, London

King's College is focusing on two issues of relevance to libraries: electronic journals and the use of electronic vs. printed information. They are collecting data by electronic means when possible.

In exploring the topic of electronic journals, the King's team is gathering data on use, cost per transaction/user, usage profiles by journal and by department, and system availability. They are also seeking qualitative data on reasons for use, user satisfaction, and ease of administration. To collect this information, they are examining system logs and administering web-based surveys.

Their analyses of the use of electronic vs. printed information also includes quantitative data on usage, cost per item/user, use profiles by department, and document availability. Their qualitative assessment addresses reasons for choosing print or electronic information, user preference, user satisfaction, and ease of administration.

The driving forces behind King's assessment project are the need for accountability to users and funding bodies and the desire to improve services where needed. As most of the higher education institutions in the U.K. are making heavy use of and investing in electronic resources as part of the eLib Programme and other efforts, the institutions want to know if those investments are paying off to users

and in what ways users are satisfied or dissatisfied with the networked information resources and services.

Challenges of Implementing Assessment Programs

In their manual, McClure and Lopata state some criteria by which they will judge the impact and success of their publication. They include whether:

- campuses will experiment with assessment techniques;
- campuses will share information and insights on how assessments can be done more effectively;
- evaluation research concepts and procedures will move forward in this area;
- campus decision makers will be able to design and plan more effective networked environments; and
- data generated will promote incorporation of users' viewpoints into the way the network evolves.

Through the CNI project, a small number of institutions have taken up this challenge. For most of the institutional teams, the road has not been easy. The time and resource investments have been significant and the ever-changing networked environment makes some techniques problematic. However, in some cases there is a strong institutional mandate for the development of assessment measures throughout the university, and in others, there is strong commitment by unit heads to work towards improving services using assessment as a diagnostic tool. In addition, the project provided a mechanism for individuals from many units on campus to coordinate assessment efforts in relation to networks and networked services.

Project team members report that strong support for assessment from top campus and unit administrators has had a positive impact on the amount of resources available for assessment efforts. The surveys and data collection efforts by the institutions involved have enabled them to get a first look at the impact of electronic information services on users and to begin answering the question, "What difference do these electronic resources and services make to users?" The institutional teams have found that a variety of data collection techniques can be useful, from log analysis to user surveys (both print and on the Web) to focus groups and individual interviews. The project has given the institutions experience with a set of tools and a start in establishing a baseline of data on electronic resources and services use for their campuses.

CNI has received support for this project from Indiana University; and Christopher Peebles and his staff have been instrumental in the project's implementation. Charles McClure has been a guiding force in this phase of the project and provided its initial inspiration. In addition, CNI has received support from the Council on Library and Information Resources (CLIR).

THE STATE OF PERFORMANCE MEASUREMENT IN LIBRARIES: A REPORT FROM THE 2ND NORTHUMBRIA INTERNATIONAL CONFERENCE

by Amos Lakos, Coordinator of Management Information Services, University of Waterloo

In September 1997, Northumbria was the venue for an international conference to discuss various library measurements and assessment issues and activities, to exchange experiences, to increase awareness of current research, and to identify issues for further study and work. The conference, sponsored by the Department of Information and Library Management at the University of Northumbria at Newcastle and by the British Library, focused on outcomes and impacts, moving from research, definition, and standardization matters to actions and implementation. Total attendance was 141 persons from 24 countries—nine of which were from North America—a truly international gathering.

The creation and draw of this conference is just one indication of the greater role that performance measures are playing in libraries today than they have in the past. Measures are being applied in a wide variety of settings and in a number of locations. Further, the 46 papers of this conference, including five poster sessions and five keynote speakers, note the trend of increased cooperation between libraries across national boundaries in developing appropriate measures, especially among those supported by the European Union. Major themes covered during the conference were:

- Performance Measurements—General Analysis and Criticism
- Defining Relevant Performance Indicators and Developing International Performance Standards
- Benchmarking
- Qualitative Measurement Activities
- Comparability Across Sectors and National Boundaries
- Service Level Agreements
- Management Information Services
- Electronic/Digital Library and Assessment of Library Networks

A brief summary of some key papers presented follows. For more detailed information, as well as for information on papers not described here for lack of space, please see <http://library.uwaterloo.ca/~aalakos/North97/norsum.html>.

Performance Measurements–General Analysis and Criticism

The first keynote paper, "Does Performance Measurement Improve Organizational Effectiveness?

A Post-Modern Analysis," presented by Rowena Cullen of Victoria University in New Zealand, set both the tone and the standard for the conference by asking: After all the research is done, the data gathering activities and analysis undertaken, and reports presented, are libraries more effective? Cullen's model of organizational effectiveness used a focus/value/purpose matrix to reach the following conclusions:

- performance measurements are political activities, taking place both on a macro and a micro level;
- how institutions act is dependent on their relative internal to external focus, the culture of the organization, and the resolve they bring to their activities;
- the profession seems to be reactive—dependent on rewards and incentives;
- performance measurements are multidimensional in nature and each library will use the measurements that suit its social construct, environment, and goals; and
- action, leadership, and initiative are needed for organizational effectiveness.

The question is, then, what kinds of measures will best support a successful institution? Stephen Town's (Cranfield University) paper, "Performance or Measurement?", took a critical look at the current state of performance measurements and their impact, criticized the over-reliance on traditional library quantitative data series, and advocated that more attention be directed to service quality indicators and to the development of assessment measures both in the digital environment and for networked services. Town also suggested increasing attention to the diverse needs of stakeholders, a concern Ian Winkworth (University of Northumbria on Newcastle) raised as well, in his paper, "Making Performance Measurement Influential." Winkworth provides an excellent overview of past and current performance measurement activities, primarily focusing on U.K. public and academic libraries and the development of international standards. Winkworth saw the need for outcome and impact measurements that have real management utility and feels that libraries may be collecting too many quantitative indicator data without relating them closely enough to stakeholder's needs and concerns. However, Winkworth pointed out that, in spite of deficiencies, libraries are well ahead of many other public services in developing effective performance measures.

The role of stakeholders in performance measures was, in fact, a theme that speakers came to time and time again. The use of stakeholders in constructing, conducting, evaluating, and, finally, acting on measures (including making plans for the future) were all discussed. Speakers emphasized the need for more qualitative measures, and ones that serve more practical purposes than performance measures have in the past. The stakeholder focus in electronic environment studies has gained special attention, as this medium offers greater possibilities of further tailoring services to stakeholders' needs.

Qualitative Measurement Activities

The growing emphasis on the use of qualitative measures to test performance were the focus in a number of papers examining aspects of service quality. Elisabeth Hart, Patricia Gannon-Leary, and Lorraine Noel's (University of Huddersfield) "The Use of Focus Groups in the Evaluation of Services" examined the use of focus groups as an assessment tool and detailed the value of this method in the assessment of lending services. Robert Bluck's (University of Northumbria at Newcastle) paper, "Team Performance—Measurement of Mystery?", pointed out that, although teams are increasingly used in many aspects of library work, performance measurement activities tend to concentrate on the individual or the organization as a whole, rather than as part of an overall system. Of particular interest is a study done by the CAVAL-Reference Interest Group Working Party in Victoria, Australia. "Performance Indicators for Reference and Information Services: A Study of Academic Libraries in Victoria, Australia," written by Barbara Paton, Eva Fisch, David Cunnington and Rosemary Cotter from LaTrobe University in Victoria, describes CAVAL's activities in identifying measures used to evaluate reference and information services in academic libraries. Further, Marjorie Murfin (Ohio State University) and Michael Havener's (University of Oklahoma) "Cronbach Revisited: Positive Bias: A Powerful Enemy to Validity in Library Surveys" tells of work done on the use of the Reference Transition Assessment Instrument (RTAI) in academic libraries. This instrument has been used since 1983 in the Wisconsin-Ohio Reference Evaluation Program to evaluate reference services in 109 academic and 121 public libraries in the U.S. and Canada. Although the instrument's statistical validity has been proven, only 4% of U.S. academic libraries have chosen to participate in the program. In their paper, Murfin and Havener make a strong case for use of the RTAI in more research and academic libraries.

The applicability of the SERVQUAL instrument in the library environment was examined in two papers. The first, Danuta Nitecki's (Yale University) "Assessment of Service Quality in Academic Libraries: Focus on the Applicability of the SERVQUAL" is an

overview of the instrument and its applicability to the study of service quality in academic libraries. According to Nitecki, in an environment where academic libraries want to be more responsive to their clients, the SERVQUAL instrument offers a strategy for defining and measuring quality of library services. Nitecki reviewed the results of eight academic library studies that used SERVQUAL to measure the quality of their ILL and reference services, but pointed out that the usefulness of the instrument in improving service management in academic libraries is only beginning to be discovered.

SERVQUAL was also the topic of, "Feedback from a Captive Audience: Reflections on the Results of a SERVQUAL Survey of Interlibrary Loan Services at Carnegie Mellon University Library." Presented by Joan Stein, this paper emphasizes the choice of the SERVQUAL instrument as a valid instrument to measure user perceptions. Stein reported that the Carnegie Mellon survey helped reshape staff perceptions of users' expectations, increased a sense of shared purpose, and helped staff set realistic priorities for ILL services.

Service Level Agreements

Another way to ensure that clients' needs are met are through Service Level Agreements (SLAs). SLAs may be defined as a set of agreements, or a working "contract," that establishes the relationship between the service provider and its clients, quantifying the minimum acceptable service to the customer. Malcolm Smith's discussion, "The Use of Service Level Agreements at the British Library," focused on the Library's effort to establish SLAs between its various departments as well as with external customers. He described the SLA format; the benefits, disadvantages, and obstacles to implementing SLA's; and how these are to be used and implemented in the British Library in the future. Smith concluded that SLAs are valuable tools in achieving a number of objectives, such as increasing the accountability of service providers, creating a customer-oriented institutional culture, and developing an internal quality chain in addition to better relations with customers.

Jo Aitkins' poster session, "Setting Standards and Monitoring Performance: The Experience of Information Services at the University of Sunderland," was an example of a variation of the SLA, where, instead of a contract, the library decides to self-impose unilateral standards focused on customer service. Among the cited benefits are: better customer service, heightened staff and client awareness of available and expected services, improved monitoring of trends, and heightened staff morale.

Developing International Performance Standards

It is no wonder that, with the concepts of international cooperation and digital libraries gaining in popularity, International Standard Organization (ISO) standards and their implementation are given attention. Two papers covered work undertaken by a number of groups in order to facilitate the creation and adoption of the ISO Standard for Library Performance Indicators. Jacob Harnesk's (The Royal Library, Stockholm) paper, "The ISO Standard on Library Performance Indicators" detailed the slow and difficult work involved in developing international standards and gives a description of the current situation. On a smaller scale was Reider Jan Zwart's (Delft University of Technology) paper, "Implementing the ISO Standard on Library Performance Indicators at Delft University of Technology Library." He described activities undertaken to develop a document delivery system (DocUTrans) in partnership with KN/Minolta, with the goal of acquiring the ISO 9002 certificate for quality service—which they did achieve, in January 1997.

Comparability Across Sectors and National Boundaries

A number of papers addressed the difficulty of comparing libraries across sectors and national boundaries. Antje Cockrill and Judith Broady's (University of Wales) "Practical Issues of Performance Measurement in British and German University Libraries"; and "Use and Interest in Performance Measures: Differences Between Library Sectors," by Sian Lambert, Jonathan Wilson and Tony Oulton (Manchester Metropolitan University) are two examples.

Management Information Services

Management Information Systems (MIS) and Decision Support Services (DSS) were topics in one session. John Blagden and Jane Barton's (Cranfield University) thought-provoking paper, "Can You Compare One University's Performance with Another?" describes a project whose aim was to develop a set of indicators to facilitate comparisons of university library performances. It builds on existing work done in the Follett Report, The Effective Academic Library Report, and the group of Concerted Action on Management Information for Libraries in Europe (CAMILE) projects—DECIDE, EQLIPSE, DECIMAL, and MINSTREL. The project is unique in its goal to develop indicators acceptable to university funding bodies, Vice Chancellors, and other senior staff within the U.K. educational sector. Issues studied are electronic library or networked resources measures, access vs. ownership, document delivery, "stock" utilization and

availability, user population definitions, and how to assess and compare user satisfaction levels across institutional boundaries.

The CAMILE projects were discussed in more detail in the poster session "European Union Support Systems in Libraries Projects CAMILE." It is anticipated that the project's concerted action will lead to a greater and more effective use of management information tools and techniques in libraries in Europe, and that it will encourage the use of European-focused performance measures and contribute to greater communication of information between European libraries. More information about CAMILE is available on the Web: <http://www2.echo.lu/libraries/en/projects/camile.html>.

The Electronic/Digital Library and Assessment of Library Networks

A number of papers examined various aspects of assessment as they pertain to the digital library, to electronic resources, and to issues of assessment of library networked services. All papers acknowledged their debt to the pioneering work of Charles McClure and Cynthia Lopata in the study *Assessing the Academic Networked Environment: Strategies and Options* (Washington, DC: CNI, 1996).

Peter Brophy and Peter Wynne (Central University of Lancashire), in their paper, "Performance Measurement and Management Information for the Electronic Library (MIEL)," reviewed the MIEL Programme, whose aim was to examine the need for new performance measures for the emerging electronic or digital library. Recommendations included: further testing of any proposed indicators in a live environment, agreement on core indicators and international standards, and the possibility of using qualitative assessment instruments such as SERVQUAL.

Amos Lakos (University of Waterloo) sought to create a framework of discussion on the new networked environment in his paper, "Identifying and Assessing Library Clients in a Networked Environment: Issues and Possibilities." In a networked environment, especially a web-based one, traditional ways to identify and measure clients and their activities becomes much more complicated. Issues of identification and authentication of clients become essential to the delivery of services and to the development of service policies. Issues of privacy and confidentiality also must to be addressed. In order to examine these concerns, various tools for tracking identities and activities on OPACs and websites are explored, as well as the possibility of using new and changing business intelligence tools for analysis.

F. W. Lancaster, University of Illinois at Urbana-Champaign, brought the conference to a close with his keynote presentation, "Evaluating the Digital Library." Lancaster identified a number of concerns we have in the move toward the electronic library, among them changing clientele and a changing resource base. He also raised the issue of a change in professional front-line activities, with the major concern that technology not only forces but also enables users to use less library services. Finally, Lancaster emphasized the important role librarians will play in the educational process.

Peter Brophy, in his conference summary, pointed out the many future-oriented sessions that had been heard, the community's growing understanding of the library as a social construct, and the growing focus on measures of outcome and user satisfaction in the profession. He emphasized the need for constant change in order to shape effective roles for libraries in the future, and reminds us to keep in mind two key questions as we face this future: What are libraries for? What is at the core of information management?

Those attending the conference were encouraged to continue to look internationally for new ideas to assess library performance, since the issues are of interest worldwide.

For more information, see the published proceedings: Proceedings of the 2nd Northumbria International Conference on Performance Measurement in Libraries and Information Services, *University of Northumbria at Newcastle: Information North, 1998. Information North's address: Information North, Bolbec Hall, Westgate Road, Newcastle upon Tyne NE1 1SE, England. Tel: +44 (0)191 232 0877. Fax: +44 (0)191 232 0804.*

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Measuring the Performance of Interlibrary Loan Operations in North American Research & College Libraries

The report of a two-year study funded by The Andrew W. Mellon Foundation. By Mary E. Jackson, ARL Access and Delivery Services Consultant.
1998, 122 pp., $45
ISBN 0-918006-33-3

To order, contact <pubs@arl.org>.

ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/>
Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL Calendar 1998–99

1998

June 25–July 2	American Library Association *Washington, DC*
July 27–28	**ARL Board Meeting** *Washington, DC*
October 7–9	ARL/OLMS Facilitation Skills Institute *Washington, DC*
October 13–16	**ARL Board and Membership Meeting** *Washington, DC*
October 13–16	Educom '98 *Orlando, FL*
October 27–28	ARL/OLMS Leading Change Institute *Chicago, IL*
November 16–19	ARL/OLMS Library Management Skills Institute I: The Manager *Washington, DC*
December 7–8	CNI Task Force Meeting *Seattle, WA*
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LICENSES AND INFORMATION POLICY: AN UPDATE ON UCC ARTICLE 2B

by Laurel Jamtgaard

At the October 1997 ARL Membership Meeting, Robert Oakley, Director of the Georgetown Law Library, gave a thoughtful and informative presentation about a proposed model law known as Article 2B of the Uniform Commercial Code.[1] This law is poised to shape the legal landscape for transactions in information products, including copyrighted works, databases, and computer software. It is therefore likely to directly impact the operations of all libraries and academic institutions.

Some Background

In the United States, Uniform State Laws are drafted by committees of attorneys, reviewed by two organizations—the American Law Institute (ALI) and the National Conference of Commissioners on Uniform State Laws (NCCUSL)—and then, if approved, sent around to the fifty states for adoption in whole or in part. Adopting a model law helps to facilitate interstate commerce because market participants can then be confident that they are operating under a similar body of law from one state to the next. Currently, areas of law encompassed in the Uniform Commercial Code include contracts for goods, leases, banking agreements, and secured lending transactions.

The intention of the drafters of Article 2B is to provide standard rules for regulating licenses of information products and intellectual property rights. The hope, as with all Uniform State Laws, is to codify *existing* case law.[2] Current case law varies, however, across states and federal circuits, so this process is not trivial.

Although many agree that the idea of codifying the law of licenses is a good one, there has been an amazing amount of controversy involved in the effort. The drafting process for Article 2B has been underway for more than five years. In the past year, the draft of Article 2B, a 200-page document, has been updated approximately every eight weeks. The April 1998 draft of Article 2B addresses, among other things:

- contract formation (includes offer and acceptance requirements for electronic agents and mass-market licenses—a.k.a. "shrink-wrap" licenses);
- construction and interpretation of license terms;
- warranties (includes implied warranty of merchantability of a computer program);
- contract performance; and
- remedies (including the right for licensors to employ "self-help" measures to retrieve or disable information products if licensees breach the license).

Article 2B is in many ways a moving target and entering the debate over specific provisions involves a steep learning curve, but more entrants are important to the process.

Concerns

In March of this year, Geoffrey Hazard, Chair of the American Law Institute (ALI), distributed a letter outlining some reasons why ALI would not submit 2B to a member vote at its May Annual Meeting in Washington, D.C.[3] The first concern expressed was that the scope of 2B was so broad that there were likely many voices still to be heard from and many who may be unaware that they will be affected.

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The example he gave hits close to home—he queried whether a library card constituted an "access contract" under 2B and whether the library community had voiced an opinion one way or another.[4]

Scope

Article 2B began as an effort to standardize software licenses, but its scope has expanded (and contracted) at various times to include motion picture, broadcast, publishing, banking, and other industries. Representatives from several of these sectors have only recently chimed in. Many parties who will be dramatically affected have yet to even put Article 2B on their radar screens.

The April 1998 draft of Article 2B covers "licenses and software contracts," defining a license as "an agreement that authorizes access to or use of information or of informational property rights...." "Information" is defined as "data, text, images, sounds, mask works, or works of authorship."

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A motion by Stephen Chow, an attorney with Smith & Sohen in Massachusetts, to reduce the scope of Article 2B was discussed at the ALI Annual Meeting in May. The motion had sought to limit the scope to:

1) Software contracts;

2) access contracts; and

3) such other transactions that are included expressly and defined with sufficient clarity to avoid surprise to affected parties.[5]

However, Mr. Chow withdrew the motion without putting it to a member vote on the understanding that the Drafting Committee had plans to revisit the question of scope during the summer.

Intersection with Federal Law

Another concern of Mr. Hazard, the relationship of Article 2B to federal law, was the focus of a three-day conference at the University of California at Berkeley in April.[6] Some argue that if non-negotiated licenses (a.k.a. "shrinkwrap licenses") are honored as provided in Article 2B, licensors will use licenses to strip away fair use rights from consumers and thus jeopardize the delicate balance struck by copyright law. Conference participants also raised questions about the interaction of Article 2B with trade secrecy law, patent law, competition policy, and the First Amendment.

To what extent does federal copyright law preempt license terms that interfere with copyright limitations such as fair use and first-sale rights? This is a tough question and one courts have struggled with on a case-by-case basis.[7] Article 2B has been drafted with the stated intent of "staying neutral" with regard to the issue of federal preemption. This stance was criticized at the Berkeley Conference by David Nimmer, co-author of the *Nimmer on Copyright Treatise* (and no relation to Raymond Nimmer, Reporter for Article 2B). He sees Article 2B's "neutrality" as disingenuous because it fails "to protect even... obvious user rights" but blesses "as presumptively valid provisions that would rob users of those rights."[8]

Although Article 2B admittedly creates federal preemption problems, the drafters are looking to Congress and the courts to solve them. At this time, attempts to pass clarifying language in Congress have not been successful.[9]

Impact on Libraries

At the Berkeley Conference, Peter Lyman of the University of California at Berkeley spoke of the potential impact of Article 2B on research libraries and the broader research community. He described the already spiraling costs of periodicals and online database fees and expressed frustration at what he perceived to be Article 2B's contribution to increasing the bargaining power of information publishers in contract negotiations.

For example, as Bob Oakley mentioned in his talk a year ago, 2B-502 declares that license terms that restrict the transfer of informational property rights are enforceable. Does this affirm a position that licenses can cast aside first-sale rights granted under copyright law?[10] I believe the answer is an oblique "yes."

The explanatory notes to the April 1998 Draft state that 2B does not apply to the *sale* of books, but only to *licenses* of information products. As Professor Charles McManis pointed out in Berkeley, most printed books already contain onerous language prohibiting the copying of *any* portion for *any* purpose, but such statements have not been found to trump "fair use."[11] Well, it is time to take another look because "[a]ll that is missing from books is the snap [to seal them closed]—and a law

saying that a snap creates an enforceable contract."[12] With a snap and Article 2B, what in the past has been a *sale* of a book could, with the blink of an eye, become a *license* (could there be a more dramatic reason for libraries to pay attention to Article 2B?).

Access contracts as defined in 2B-615 will be extremely important to libraries because these contracts are dealt with daily. 2B-615 provides that a license can place use restrictions on the information accessed. And where does fair use fit in here? Well, it doesn't unless you put the rights in the contract explicitly or Congress acts to resolve the preemption question in favor of fair use.

It is crucial that the library community enter into the Article 2B conversation. The statute, when/if adopted, will provide *default* rules that can be overcome by language in the contract itself so familiarity with Article 2B may therefore enable librarians to overcome the most problematic defaults during license negotiations. But be forewarned—with the affirmation of mass-market licenses, Article 2B will transfer considerable bargaining power to the publisher's side of the table.

Although Article 2B is a state-based law, it is a critical front in the battle because it strengthens content providers' ability to use "shrinkwrap" and "clickwrap" licenses to control their information products' post-distribution.

Where Does Article 2B Stand?

ALI has announced plans to review the progress on Article 2B at its November Council meeting and may at that time recommend the Article for a final vote at its 1999 Annual meeting.

As late as April, NCCUSL had planned to submit 2B to its membership for a final vote at its Annual Meeting, July 24, 1998. It has stepped back somewhat from that position and has announced plans to read "non-controversial" aspects of 2B into the record at the July meeting and to entertain motions and debate on specific sections. NCCUSL will not submit Article 2B to a final state-by-state member vote until its 1999 Annual Meeting at the earliest.

The Drafting Committee had planned that no further drafting committee meetings would be needed after May, but with the concerns raised by ALI and others more meetings have been scheduled.

There is an increasing awareness of Article 2B and discussion forums are popping up where librarians and other members of the research community may enter the debate. For example, attorney Carol Kunze's "2B Guide" site offers the most comprehensive online information about Article 2B.[13] It includes html versions of most comments submitted to ALI, NCCUSL, and the Drafting Committee, as well as links to online news articles on the topic. In addition, Ed Foster of *InfoWorld* has recently started hosting a discussion page on Article 2B.[14]

More voices from the library and educational communities need to be heard. One way to do so is to submit comments to the NCCUSL Commissioner from your home state. Letters can also be submitted directly to the leadership of NCCUSL, the Article 2B Drafting Committee, and ALI.[15]

The Bigger Information Policy Picture

The significance of Article 2B should be considered in conjunction with the various copyright and database bills currently working their way through Congress. The battle waging over the appropriate direction of domestic and international information policy has reached a frenzy this summer.

Some content providers are reacting to the proliferation of digital technology with a push for stronger legal protection of information products. Not satisfied with advances in existing legal and emerging technological means to protect information, these media, Hollywood, and publishing interests are driving bills through Congress to extend the term of copyright,[16] provide for a new right in databases wholly outside of copyright law,[17] and create a "traveling right of trespass" (my phrase, not theirs) for technologically protected works.[18] Each of these efforts is a truckload of cement primed to pave the road to a "pay-per-view" digital age.

Others, including the library community, seek to protect the balance between information as property and information as a public resource. There has been support from this group for a digital age copyright bill sponsored by Representatives Boucher (D-VA) and Campbell (R-CA)[19] that seeks to preserve the fair use and first-sale doctrines and to provide a clear signal to courts about federal copyright preemption of non-negotiated license terms. The challenge in this effort, besides facing the incredible financial resources of the media, motion picture, and publishing industries, is how best to translate these balancing principles into the digital world.

Although Article 2B is a state-based law, it is a critical front in the battle because it strengthens content providers' ability to use "shrinkwrap" and "clickwrap" licenses to control their information

products' post-distribution. As currently drafted, it is yet another avenue enabling increased private "fencing" of information.

Try to Imagine...

At the Berkeley Conference, Peter Lyman painted a grim picture of a university environment in which all information products are licensed. He shuddered as he described the revelation that nothing in Article 2B prohibits the application of the proposed license regime to printed books and periodicals. With that in mind, the crystal ball view became one in which archiving was too costly to continue; all information was available only on a pay-per-view basis and only to university students and professors; students were unable to re-sell text books; something akin to "fair use rights" were available only for the least valuable resources thanks to a loss of bargaining power; and university libraries would no longer be the catalyst for community-wide entrepreneurial research efforts. Innovation suffers. The economy suffers. Etc.

[You get the idea.]

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About the Author

Laurel Jamtgaard is an attorney and member of the State Bar of California. She has just completed a six-month research fellowship at UC-Berkeley with Professor Pamela Samuelson focused upon intellectual property policy issues. She is currently working with ARL and the Special Libraries Association on information policy and scholarly communication issues. She will return to California in October to practice law.

[1] Robert L. Oakley, *UCC Article 2B: Some Preliminary Comments on a New Issue for the Library Community*, October 16, 1997. Available online at <http://www.arl.org/arl/proceedings/131/oakley.html>. All references to the text of Article 2B in this article are to the April 1998 Draft, available at <http://www.law.upenn.edu/bll/ulc/ulc.htm>.

[2] Today when judges decide disputes involving licensing transactions (such as publishing contracts, database access contracts, and contracts for motion picture rights) they base their decisions upon applicable *case law precedents*. If Article 2B is adopted by the states, then judges will look to the statute for initial direction on how to decide similar disputes.

[3] Geoffrey C. Hazard Jr., Letter to Gene N. Lebrun, President of NCCUSL, and Charles Alan Wright, President, The American Law Institute, March 26, 1998. Available online at <http://www.softwareindustry.org/issues/guide/docs/ghmar98.html>.

[4] An "access contract" is defined in 2B-102(a)(1) to involve access to electronic resources, but if a library card is used to enable access to electronic resources in the library, it may qualify.

[5] Revised Motion of Stephen Y. Chow, American Law Institute 1998 Annual Meeting, May 14, 1998.

[6] See *Intellectual Property and Contract Law in the Information Age: The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce*, April 23-25, 1998, Berkeley Center for Law & Technology, <http://sims.berkeley.edu/BCLT/events/ucc2b/>.

[7] *Compare* Vault Corp. v. Quaid Software Ltd., 847 F. 2d 255 (5th Cir. 1988) *and* ProCD v. Zeidenberg, 86 F. 3d 1447 (7th Cir. 1997).

[8] David Nimmer, Elliot Brown, and Gary N. Frischling, *The Metamorphosis of Contract Into Expand* (DRAFT), Conference Proceedings, Berkeley Conference *supra* note 7.

[9] See e.g., House Bill 3048, 105th Congress, the Digital Era Copyright Act (1998), introduced by Representative Rick Boucher of Virginia.

[10] The First Sale doctrine, codified in §109 of the Copyright Act, allows libraries or other owners of a copy of a copyrighted work to transfer ownership or possession of the copy. This enables library lending practices as well as donations of materials to libraries.

[11] See Bobbs-Merrill v. Isidor Straus, 210 U.S. 339 (1908).

[12] Charles McManis, *The Privatization (or "Shrink-wrapping") of American Copyright Law* (DRAFT), Proceedings of the April 1998 Berkeley Conference on Article 2B, *supra* note 7.

[13] See <http://www.webcom.com/software/issues/guide/index.html>.

[14] See <http://forums.infoworld.com/threads/get.cgi?56033>.

[15] Comments on the draft are encouraged by ALI and NCCUSL and the Drafting Committee itself. Send letters to NCCUSL at 211 E. Ontario Street, Suite 1300, Chicago, Illinois 60611; to the Article 2B Drafting Committee care of Reporter, Ray Nimmer, Law Center, University of Houston, 4800 Calhoun, Houston, TX 77004; and/or to the American Law Institute at 4025 Chestnut Street, Philadelphia, PA 19104-3099.

[16] H.R. 2589, 105th Congress, Copyright Term Extension Act (1998).

[17] H.R. 2652, 105th Congress, The Collections of Information Anti-Piracy Act (1998). This bill, which creates broad new protection for compilations, states that its provisions will not preempt the state law of contract and thus increases the potential power of a licensing regime.

[18] H.R. 2281, §1201(a), 105th Congress, WIPO Copyright Treaties Implementation Act (1998). The anti-circumvention provision of this bill creates a new right for information providers to control post-distribution *access* to their works.

[19] H.R. 3048, *supra* note 10.

Academic Community Sets Agenda to Reclaim Scholarly Publishing

by Mary M. Case, Director, ARL Office of Scholarly Communication

Research universities have it within their power to work with each other and scholarly societies to transform scholarly communication into "a system of electronically mediated publications that will provide enhanced access to scholarly information and relief from the escalating prices of commercial publishers." So conclude the participants—university presidents, provosts, faculty, librarians, counsels, and representatives of scholarly societies and university presses—in a special Roundtable on Managing Intellectual Property in Higher Education. The findings of this group are reported in the essay "To Publish and Perish," featured in the March 1998 issue of *Policy Perspectives*, the publication of the Pew Higher Education Roundtable.

Noting that the rising cost of scholarly publications is not a "library problem," but a symptom of the deeper conflict between the sociology and economics of academic publishing, the essay contrasts the expectation of an open exchange of information within the academy to the pricing and copyright practices of some commercial publishers that control many of the major scholarly publishing venues. In an effort to regain some control over the research and scholarship generated by the academic community, the Roundtable participants proposed a set of five strategies to address the problem. They recommended that:

- promotion and tenure committees disentangle the notions of quality and quantity in the work of the faculty;
- libraries leverage their resources by creating a more coherent market for scholarly publications;
- universities, led by their national associations, help faculty understand the implications of signing away their intellectual property rights;
- universities and scholarly societies invest in electronic forms of peer-reviewed scholarly communication; and
- universities and scholarly societies decouple publication and faculty peer reviewed evaluation of the merit of scholarly work.

The participants stated that "The outcome we seek is a set of specific arrangements—linking institutions, their faculty, and their scholarly organizations—that protects the rights of faculty and secures for their appointing institutions a more assured ability to provide access to research and scholarly information." While the challenges are not insignificant, the group concluded that:

> the risks of doing nothing substantially outweigh the difficulty of doing something—and doing it now! A moment of opportunity is at hand, occasioned by the potential for peer-reviewed electronic publishing and a sense of desperation spawned by runaway acquisition costs. Missing this opportunity will mean more rapidly accelerating costs, greater commercial control, and, in the end, less access to scholarly communications.

The Roundtable was convened in Baltimore in November 1997 to confront the challenges facing the academic community in maintaining access to significant research and scholarship at a time when both the volume and price of information have increased nearly three-fold in the last decade alone. The Roundtable was hosted by the Johns Hopkins University and sponsored by the Association of American Universities (AAU), the Association of Research Libraries (ARL), and the Pew Higher Education Roundtable. Funding was provided by the Gladys Krieble Delmas Foundation, the W. K. Kellogg Foundation, and The Pew Charitable Trusts.

ARL is pursuing a number of the recommendations in the report, including the continued development of SPARC, the Scholarly Publishing & Academic Resources Coalition, as an investment in electronic forms of scholarly communication that stimulate competition in the marketplace. In addition, ARL will seek to partner with the AAU to develop an organized campaign to inform faculty of the current economics of scholarly publication and to explore options for faculty to retain rights to their own work for the purposes of research and education.

In the meantime, ARL member institutions are finding "To Publish and Perish" a useful document for opening discussions on their campuses. Several directors of ARL libraries have distributed the report to and held meetings with state legislators, Boards of Regents, campus administrators, university budget officers, deans, faculty senates, library committees, journal editors, junior faculty, graduate students, campus copyright committees, and departmental faculty. One institution reported sending the essay to all faculty and students. ARL is developing a website to track progress on the recommendations that resulted from the Pew Roundtable and to share experiences that ARL members have as they use the report in campus and broader community discussions. Watch <http://www.arl.org/scomm/pew/> for further information.

Individual copies of the March 1998 issue of Policy Perspectives *can be obtained from the Institute for Research on Higher Education, University of Pennsylvania, 4200 Pine Street, 5A, Philadelphia, PA 19104-4090; phone 1-800-437-9799. The issue is available on the Web at <http://www.arl.org/scomm/pew/pewrept.html> or in PDF at <http://www.irhe.upenn.edu/cgi-bin/pp-cat.pl#V7N4>. Member libraries may contact ARL at <pubs@arl.org> for information about ordering copies of the report.*

A SPOTLIGHT ON HIGH-PERFORMING ILL/DD OPERATIONS IN RESEARCH LIBRARIES

by Mary Jackson, ARL Access & Delivery Services Consultant

Over the past two years ARL collected a wealth of data on the 1996 performance of interlibrary loan/document delivery (ILL/DD) services of North American research and college libraries. With funding from The Andrew W. Mellon Foundation and advice from the Council on Library and Information Resources, ARL set out to identify the attributes of low-cost, high-performing ILL/DD operations against which other libraries could compare themselves and find ways to improve their local performance. High-performing borrowing or lending operations were defined as the top ten research libraries performing best in one or more categories of the three borrowing performance measures (cost, fill rate, or turnaround time), or in one or both of the lending measures (cost and fill rate). Averages were calculated for the ten libraries with the lowest borrowing unit costs, the ten libraries with the highest borrowing fill rates, the ten with the fastest borrowing turnaround times, and for the ten with the lowest lending unit costs and the ten libraries with the highest lending fill rates. The accompanying chart presents these averages and compares them with the mean and median performance of all 97 research library participants. The level of user satisfaction with ILL/DD services, as measured in a sample survey in this study, did not vary significantly across all research library participants and thus is not included in this analysis.

What are the characteristics of ILL/DD operations in the ten libraries with the lowest unit costs, the ten with the highest fill rates, or the ten with the fastest turnaround times? How do these high-performing operations differ from the other research library participants?

High-Performing Borrowing Operations

Three measures were used to track the performance of ILL borrowing: unit cost, fill rate, and turnaround time. Of the 97 research library participants, Colorado State University was the only research library that appeared in the top ten for all three borrowing measures. In addition, the University of Chicago was among the ten libraries with very low unit costs and very high fill rates. Four additional research libraries had very low unit costs and very fast turnaround times: the University of Cincinnati, Ohio University, the University of Illinois at Chicago (UI-C) Main Library's LCS unit, and the LCS unit of UI-C's Library of the Health Sciences. (LCS, or Library Computer System, is the unit that initiates loan requests on the ILLINET Online system, the union catalog of Illinois libraries.)

Nineteen other research libraries ranked in the top ten for a single borrowing performance measure. Thus, a total of 25 research libraries ranked in the top ten for one or more borrowing performance measures. These high-performing borrowing operations share a number of characteristics.

User-Initiated Ordering

A majority of the top-performing borrowing operations offer electronic user-initiated ordering, either via statewide systems such as OhioLINK or through locally-developed electronic order forms. Systems that pass electronic patron request forms directly to the potential lender or into national messaging systems eliminate the need for ILL staff involvement in these initial steps of the borrowing process. Staff costs represent two-thirds of the borrowing unit cost, so by increasing user-initiated ordering staff costs are lessened and the borrowing unit cost is thus lowered.

Maximizing Technology

Maximizing use of technology is a second characteristic shared by high-performing ILL borrowing operations. Nine of the ten research libraries with the very fastest turnaround times encourage or even require patrons to submit requests electronically. Four libraries use OCLC's ILL Prism Transfer or FirstSearch-ILL link to enable patrons to identify items in online databases and place electronic ILL requests. These system features are designed to reduce delays in internal processing because patron requests are transferred directly into the OCLC ILL system without staff re-keying requests. Eliminating the need to re-key requests speeds up the process and saves staff time, thereby freeing staff to work on other requests.

Many of the high-performing borrowing operations use a single ILL messaging system. Workflow and procedures are streamlined when only one system is used, resulting in faster turnaround time and lower unit costs.

The ILL operation at Colorado State may be the ultimate example of maximizing technology, as their borrowing operation is truly paperless. Patrons are required to submit requests electronically; in seven keystrokes staff transfer those requests into the OCLC ILL system. OCLC ILL requests are subsequently copied into the CLIO management software for follow-up tracking and report generation. Colorado State has developed a series of "custom holding paths" and OCLC macros (keystroke shortcuts) that permit student assistants to process the majority of their borrowing requests. Using available software and a modest

amount of local programming permits ILL requests to be received from the patron and to be sent to the first potential lender within hours, rather than the average of four days it takes most research libraries to complete the same segment of the process.

Many high-performing borrowing operations also use OCLC's ILL Fee Management system to pay invoices, another example of software that can significantly minimize the time spent by staff in handling invoices, thus reducing the staff unit costs.

Delivery Technologies

Research libraries with the fastest borrowing turnaround times use delivery services such as Ariel, fax, state/regional couriers, FedEx, or UPS to a greater extent than do libraries with the very slowest turnaround times. Libraries with fast turnaround time ask other libraries to supply all articles via Ariel and/or fax, and some even choose lenders based on Ariel availability. These borrowers are also willing to pay for next-day delivery for most requests, rather than just for "super, super rush" requests.

Staffing Levels and Staff Expertise

High-performing borrowing operations employ different levels of staff than the aggregate of all research libraries. In particular, these operations have fewer professional non-supervisors and are more often managed by support staff supervisors than the borrowing operations of other research libraries that participated in the study. The ten libraries with the very lowest borrowing unit costs also rely slightly more on students and slightly less on support staff than do either all research libraries or the subset of the 25 libraries with high-performing borrowing operations.

Staff in these operations also monitor actual performance of specific lenders and choose only those with fast turnaround time and liberal lending policies, both of which translate into higher fill rates.

Libraries with high borrowing fill rates have staff who know unique collections in other libraries nationally and internationally, are aware of a variety of commercial suppliers, have command of complex cataloging rules, and search print bibliographies rather than assuming that "if the item isn't found on OCLC, it doesn't exist." Thus, staff are able to obtain difficult materials without expending significant additional time on each request.

Local Policies

Local policies also contribute to a library's high borrowing performance. Nearly three-quarters of the high-performing borrowing operations do not limit the number of requests patrons are permitted to submit at one time. Half do not charge patrons for loans or copies, eliminating staff involvement in collecting fees and/or maintaining accounts. Both of these policies reduce staff mediation, and therefore reduce their costs. Two-thirds of the high-performing borrowers mail photocopies to patrons, again eliminating an additional patron contact with ILL staff at the end of the process. Finally, these libraries do not limit the amount they are willing to pay to obtain an item—they

Research Library ILL/DD Performance Measures

	High-Performance	Mean Performance	Median Performance
Borrowing			
Unit Cost	$9.76	$18.35	$16.63
Fill rate	93%	85%	86%
Turnaround time	10.2 calendar days	15.6 calendar days	14.9 calendar days
Lending			
Unit Cost	$4.87	$9.48	$8.14
Fill rate	78%	58%	57%

choose libraries that provide reliable service (even if there is a charge) rather than trying to find libraries that do not have a lending fee, thereby saving staff time, reducing staff costs, and minimizing overall turnaround time.

High-Performing Lending Operations

Two measures were used to track the performance of ILL lending operations: unit cost and fill rate. Of the 97 research library participants, only the University of Alberta and the University of Wisconsin-Madison recorded very low unit costs and very high fill rates. An additional 17 libraries recorded either very low unit costs or very high fill rates, but not both. The study confirmed that high-performing lending operations in research libraries are comparable to or slightly better than the average performance of lending operations in the college libraries that participated in the study.

Expenditures on Technology

On average, high-performing lending operations in research libraries spend (on a unit cost basis) just over twice as much on equipment (hardware and software) than do most research libraries. Although the study did not confirm this, it is reasonable to speculate that increased use of technology may reduce unit cost if technology is deployed in ways that minimizes staff involvement in some of the steps of the lending procedures.

Innovative Use of Staff

Like most research libraries, Alberta and Wisconsin-Madison have centralized lending operations, requiring retrieval from multiple branch libraries. Both libraries train staff (student assistants and/or full-time staff) to retrieve from one or two branch or departmental libraries rather than assigning staff to pull materials from all branch or departmental libraries on campus. Staff become familiar with a specific collection (such as where materials may be located if not properly shelved), thus increasing the lending fill rates.

Alberta has taken this specialization a step further and encourages libraries to contract with them for priority lending services. A borrowing library pays the salary of an Alberta staff member to fill their requests; in doing so, the borrowing library receives preferential lending service from the Alberta collection. This is an interesting example of outsourcing a library's borrowing operation to a library with a collection that can fill a large portion of requests. (One of the college library participants in the study also relies on a neighboring library to verify and fill its borrowing requests, resulting in a very low borrowing unit cost for that college library.) These innovative lending services confirm the only statistically significant finding in the study: as lending volume increases, the lending unit cost decreases. Libraries wishing to lower their lending unit costs could do so by increasing the number of lending transactions they fill.

Staff Composition

Like high-performing borrowing operations, high-performing lending operations rely on a different mix of staff categories than most research libraries. The ten libraries with the lowest lending unit costs use no professional staff in non-supervisor positions in their lending operations. Libraries with the lowest lending unit costs use student assistants slightly more and support staff slightly less than other research libraries. However, the 19 high-performing lending operations use support staff slightly more and student assistants slightly less than all research libraries. Given this variability in use of student assistants and support staff, it is reasonable to speculate that the low unit costs for both groups of high-performers are driven more by the absence of professional staff in non-supervisory roles than in the mix of support staff and student assistants used.

Conclusion

The ILL/DD Performance Measures Study identified a handful of operations that chart new and innovative ways to manage interlibrary loan operations. The challenge is to spread awareness of the potential for improvements and develop strategies for replicating the best practices in more libraries.

To encourage this process, ARL is planning a series of workshops to assist attendees in evaluating and adapting these performance enhancing procedures and tools for improving local services. The workshops, aimed at ILL/DD managers and their supervisors, will provide additional details on characteristics of high-performing borrowing and lending operations. The initial workshops are tentatively planned for the second half of 1998. Specifics will be posted on the ARL website <http://www.arl.org/> when available.

Measuring the Performance of Interlibrary Loan Operations in North American Research and College Libraries was published in May by ARL. This final report details the findings of the ARL ILL/DD Performance Measures Study. The Executive Summary of the report and ordering information may be found at <http://www.arl.org/access/illdd/pr.shtml>. Also on the Web is a previous newsletter article summarizing the wide range of ILL/DD performance documented in research and college libraries, "Measuring the Performance of Interlibrary Loan and Document Delivery Services" (ARL 195, Dec. 1997); it is available at <http://www.arl.org/access/illdd/illdd-measperf9712.shtml>.

Coalition for Networked Information

Clifford Lynch, Executive Director

Quantities of Information

by Joan K. Lippincott, Associate Executive Director, CNI

The Coalition for Networked Information's Spring Task Force Meeting was held in Crystal City, Virginia on April 14-15, 1998. A wide variety of topics related to networked information were covered in a plenary talk by Michael Lesk, a panel on digital preservation, and project briefing sessions. A summary of Lesk's talk is provided here; the complete meeting report and materials from the project briefing sessions are available on CNI's website at <http://www.cni.org/tfms/1998a.spring/>.

The opening plenary session at CNI's Spring Task Force Meeting featured a presentation by Michael Lesk, on leave from Bellcore and currently serving as Division Director of Information and Intelligent Systems at the National Science Foundation, where he oversees the Digital Libraries 2 initiative. Lesk has written extensively about information and digital libraries, and recently produced the valuable book, *Practical Digital Libraries: Books, Bytes, and Bucks* (Morgan Kaufmann Publishers, 1997). CNI's Executive Director Clifford Lynch observed in his introduction of the speaker Lesk's reputation for provocative comments and for insightful and pithy observations that open up new areas of speculation. Lesk's theme was the amount, worth, and usability of the information available in the world.

Managing the sheer quantity of information available in digital form is a daunting task. Lesk gave examples and presented charts to demonstrate the great amount and variety of information that exist. His examples ranged from photograph collections by professionals and amateurs to digitized phone conversations to satellite data. He referred to economists' discussions about supply and demand and its relationship to value and then asked whether we will have so much information—including freely available information—that it will become worthless.

A related issue is how much information will actually be seen or used by humans. Lesk cited work by a psychologist who theorizes that the human memory holds about 200 megabytes and that people can take in one byte/second of information. An average American spends 300 hours/year with some kind of media. In the world of the future, then, there will be more information than human memory can cope with, leading Lesk to conclude, "[I]n a short time there will be so much information that only a small fraction of it will be seen by a human being." This is true already of some large datasets, such as those collected by NASA.

Lesk's next question, then, was: If there's so much information, is it worth anything? He noted that since libraries don't charge for information, no one truly knows what it is—or they are—worth. Universities spend an average of three percent of their budget on libraries, but do they know if it is well spent? Lesk believes, however, that having a lot of information is, in fact, valuable. The information sector of our economy is growing, and in more and more industries a larger portion of costs will be information-related instead of materials- and/or labor-related.

Lesk had some specific suggestions for the university community. He encouraged universities to develop high-prestige sections of their websites, stimulated by cash payments to authors, that would become desirable venues for scholarly publications. Universities could control the economic system of scholarly publication and the preservation of that information. He also stated that, while in a few years it will be possible to record literally all information, we need to decide what we can do with that information; therefore, we need more research on information-seeking and information use.

Lesk concluded with his observations on what these trends in information mean to society and to information professionals:

> Summarizing is the key problem for us to work on. We need to be able to take quantities of information and abstract the useful parts in all formats—text, audio, video. There has been relatively little research on this but people are starting to attend to it.
>
> Librarians will be worth more, and libraries may be worth less. People good at managing memory might be the ones who matter.
>
> Attention is the scarce resource, not information. Organizing information and helping people find their way through it is a 'good thing.'
>
> Information professionals will become more valuable as people increasingly rely on an information specialist to help them deal with the quantity of information out there. The focus of information specialists must be on helping people.

Paul Evan Peters Award and Scholarship Fund

The selection process is underway for the first recipient of the Paul Evan Peters Award. The winner will be announced at CNI's Fall 1998 meeting. The award is sponsored by ARL, EDUCAUSE, Microsoft, and Xerox. Additional information is available at <http://www.educause.edu/awards/awards.html>.

Duane Webster, Executive Director of ARL, encourages additional contributions to the Paul Evan Peters Scholarship Fund. A committee headed by Charles Henry of Rice University is soliciting gifts. Information on the scholarship fund is available on CNI's website at <http://www.cni.org/docs/scholarship/pep-scholarship.html>.

Fall Task Force Meeting

The Fall 1998 Task Force meeting will be held at the Sheraton Seattle Hotel and Towers in Seattle, Washington on December 7 and 8, immediately preceding CAUSE98.

EVALUATING LIBRARY DIRECTORS: A CHECKLIST

prepared by George Soete, ARL/OLMS Organizational Development Consultant

To assist those who are responsible for or who will participate in the performance evaluations of academic library directors, the ARL Committee on Leadership and Management worked with ARL/OLMS Organizational Development Consultant George Soete to collect and analyze information about library director roles and responsibilities. The project resulted in a checklist of recommendations whose aim is to promote greater knowledge among those who participate in the director evaluation process, to foster both effectiveness and fairness in director evaluations, and to strengthen library leadership as part of the overall process of improving libraries. The checklist is also available at <http://www.arl.org/oms/checklist.html>.

The Director's Responsibilities

Today's academic library directors often hold positions of broad responsibility and high visibility within their institutions. They may be responsible for information systems beyond the walls of the library; education and outreach programs; archives, museums, and galleries; and computing and telecommunications operations of vast proportions. Virtually everyone on campus uses or benefits from the library and its allied operations.

Clearly, the director's leadership is a key factor in the success or failure of the library. Directors have leadership responsibility for envisioning the future of their organizations and setting goals to achieve that future, choosing and leading the best possible staff, managing resources wisely, fund raising, seeing that exciting new programs get implemented, and assuring that the technology is there to support those programs. Because libraries are a critical aspect of the educational process, designing and maintaining systems for evaluating the performance of library directors is now more important than ever before.

Ideally, participants in the director review process should be well informed about what library directors do and what should be expected of the director. More important, participants need to be aware of the director's goals and expectations as well as her or his accomplishments during the period of review. Participants should also work to make sure that the evaluation process is one that will promote the growth and development of the director and the improvement of library services and collections.

Key Leadership Roles

In order to assess the library director's performance, the full range of her or his leadership roles should be considered. Though the director may delegate portions of these responsibilities to others, he or she has ultimate leadership responsibility for their effective implementation.

1. *Chief Representative and Spokesperson.* Directors act as the chief external representatives of their libraries; they present and explain the library to others; they distribute information to people (especially influential stakeholders) outside the library; they inform outsiders of progress within the library; and they promote the library to external constituents.

2. *Campus Administrator.* Directors actively participate in the governance of the university or college through membership on committees, standing administrative groups, and task forces; they help develop policy on information issues, but also serve the larger community in tasks that may have little or no direct bearing on the library or on information policy; and they may administer—or partner with others who administer—operations outside the library (e.g., information technology).

3. *Liaison.* Directors maintain contacts outside the library with key stakeholders in the parent institution (e.g., faculty and other constituent groups, advisory groups, other administrators), as well as with stakeholders outside the parent institution (e.g., community advisory and advocacy groups); they build external information networks; they serve as a significant contact point for those who wish to influence the library's goals; and they attempt through interactions with outside organizations to influence the environment in ways that are beneficial to the library (e.g., legislation).

4. *Monitor.* Successful directors remain informed about critical developments in the external environment, including changes in how library users use the library and what users need in terms of information services; they are aware of current developments in other libraries and in the library profession; they use that knowledge to solve problems and to develop new services; and they educate the parent institution and the internal organization about information and communication technology issues.

5. *Negotiator and Advocate.* Directors negotiate with organizations and individuals outside the library to secure funding, reach agreement on key issues, and safeguard the interests of the library.

(Continued on page 12)

Checklist for Assessing the Performance Evaluation Process

The checklist is divided into three general areas: review process guidelines, review process criteria, and review process participants. There are at least two possible uses of the checklist: 1) as a framework for discussion between directors and those who are responsible for evaluating them; and 2) as a tool for educating those who participate in the director's review. Although this list is not meant to be conclusive or restrictive, it presents important questions that should be addressed during the performance evaluation process.

I. *Review Process Guidelines*

A. Is there a formal process for performance review of the library director, or are there other effective means for monitoring her or his performance and providing feedback?

B. Are there documented procedural guidelines for the review process? If not, are the ad hoc guidelines mutually satisfactory to both the director and her or his supervisor?

C. Does the review have a clear purpose? Is it:
- **a decision tool** (used to decide whether the director will be reappointed or given a salary adjustment);
- **a developmental tool** (used to assist the director in performance improvement);
- **a communication tool** (used to share information about campus and library goals, problems, etc.);
- or any combination of the above?

D. Is the frequency of the review satisfactory to key participants in the process?

E. Does the process result in specific, candid feedback that is behavioral and recognizable and that will help the director build on performance strengths and work on performance weaknesses?

F. Are discussions of institutional and library priorities, goals, and objectives between director and participants part of the review process?

G. Is there an opportunity for the director to provide documentation or context, which may include planning goals, accomplishments, constraints, and other contextual information that will help participants in the review to make informed judgments?

II. *Review Process Criteria*

A. Are there documented criteria for the review that specifically refer to the director's position and responsibilities? Alternatively, are there generic criteria that are customized as part of the review process?

B. A principal measure of the director's performance is her or his success in achieving negotiated expectations as documented in library and institutional planning documents. Are the expectations clearly outlined and understood by participants? Does the review initiator provide an overall context for the review participants, especially regarding factors outside the director's control (e.g., a campus-mandated budget cut)?

C. Are the changing and evolving roles of the director (e.g., fund raising) sufficiently recognized in the review process?

D. Is there a distinction between the performance of the library and the performance of its director? Is it clear to those involved in the process which aspects of the library's performance might be attributable to the director's leadership and which might not?

III. *Review Process Participants*

A. Is there an opportunity for a variety of participants to have input into the performance review process, which may include library staff, library users, institutional stakeholders with whom the director works, and external persons with knowledge of the director's work?

B. Is the input of those who know the director's performance first-hand given more weight than others? If anonymous input is offered, is it evaluated as such?

C. Does the review committee include another administrator comparable to the director who can provide assistance to the group during the process?

D. Is the director's supervisor actively involved in the process even though she or he might not be the review initiator? Does the supervisor give direct feedback to the director and provide participants with contextual information that will help them evaluate the director's performance?

Continued

6. *Fund Raiser.* Directors lead the effort to identify needs that cannot be adequately supported by the parent institution, set priorities, and garner external funding through grants, gifts, endowments, and other development activities.

7. *Leader of Planning and Operations.* Directors lead members of the library organization in developing value systems, visions, and goals for the library; they promote high-quality services by involving library staff appropriately in planning and decision making; they assure that there are performance measures and accountability systems and hold staff to them; they seek to understand internal library issues, problems, and operations in sufficient depth to make informed decisions; and they plan, coordinate, and oversee major multiyear capital projects, as well as smaller facilities projects.

8. *Leader of Staff.* Directors create and support a continuous learning environment within the library and encourage staff to participate actively in virtually all the leadership roles noted in this list; they monitor the human relations side of the operation, insuring high-quality hiring, placement, retention, training, motivation, performance evaluation, and reward systems; they practice "facilitational leadership," especially in leading a diverse work force; they handle conflicts and crises within the library; they take corrective actions when unexpected disturbances occur; and some directors may serve as deans with responsibility for librarians who have faculty appointments.

9. *Communicator.* Directors share and distribute information within the library through staff meetings, personal contacts, and other means; they invite input from individuals and groups within the library, listen attentively to that input, and act on it for the good of the library and its users.

10. *Change Agent and Entrepreneur.* Directors introduce change within the library by identifying problems, recognizing and seizing opportunities, and implementing new systems and programs; they promote experimentation and risk taking within the library (e.g., through the application of new technologies and innovative uses of networks); and they encourage staff to develop entrepreneurial skills.

11. *Resource Allocator.* Directors develop priorities for resource allocation and design the organizational structure to achieve those priorities; they allocate funds, time, staff, materials, and equipment to assure that the library is a successful one; and they authorize major resource-related decisions made within the library.

This list of leadership roles is based on the work of Henry Mintzberg[1] and Michael Ann Moskowitz[2], with input from several ARL directors.

[1] Henry Mintzberg, *The Structuring of Organizations*, Englewood Cliffs, NJ: Prentice-Hall, 1979.

[2] Michael Ann Moskowitz, "The Managerial Roles of Academic Library Directors: The Mintzberg Model," *College and Research Libraries* 47 (Sept. 1986): 452-59.

RECENTLY PUBLISHED BY ARL

OLMS SPEC Kit #229, *Evaluating Academic Library Directors*, May 1998.

OLMS Occasional Paper #21, *Evaluating Library Directors: A Study of Current Practice and a Checklist of Recommendations*, May 1998.

Statistics and Measurement

Julia Blixrud, Senior Program Officer

The State of Salaries in Research Libraries

The median salary figure for professional staff in ARL university libraries increased in FY1997-98 to $44,534 from $43,170 in FY1996-97, representing a slight increase in the purchasing power of ARL librarians when inflation is taken into account. For nonuniversity libraries, the median salary figure increased even more: from $51,150 to $55,055. The median beginning professional salary in university libraries is $28,500; in nonuniversity libraries it is $28,724. Both numbers are slightly higher than those reported last year. The figures come from the recently published *ARL Annual Salary Survey 1997-98*, a report on ARL professional staff salaries.

Librarians at private U.S. university libraries still earn more than their counterparts at publicly funded U.S. university libraries. The differential in FY1997-98 is $2,220, which is 4.6% more for the average position in a private library. The overall average salary at private U.S. institutions is $49,778; at public U.S. institutions it is $47,558; and at Canadian institutions it is $45,236 (U.S. dollars). The overall average salary in all ARL university libraries, excluding medical and law libraries, is $48,090. ARL university libraries in the Pacific region ($55,325) and New England ($52,014) again have the highest average salaries, while those in the East South Central ($42,382) and West South Central regions ($42,782) continue to have the lowest.

The 848 minority librarians in the 97 U.S. member university libraries account for 11.03% of ARL's U.S. library professionals. Fewer minority professionals are working in the New England, East North Central, West North Central, East South Central, West South Central, and Mountain regions, while more are to be found in the Middle Atlantic, South Atlantic, and Pacific regions. The salary differential between minority average salaries from overall average salaries is $2,054, which is 4.5% lower for minority staff, a slight improvement from last year.

For the second consecutive year, the average salary for female directors in university libraries is higher than that of male directors, 3.6% higher. However, at medical libraries female directors earn 6.1% less than male directors, while at law libraries they earn 4.5% less. Overall, women still earn less in ARL university libraries although they represent 65% of all professional staff: the average salary for women is $46,888, which is 93% that of men's, $50,171.

The newly released *ARL Annual Salary Survey 1997-98* is a compilation of detailed tables of salaries for almost 12,200 ARL professional librarians. These tables are arranged by job category, years of experience, sex, minority status, size of library, and geographic region. The *Survey*, an important research and management resource, is based on data collected from the 110 university and 11 nonuniversity ARL libraries, and continues to be the most comprehensive and thorough guide to current salaries in major U.S. and Canadian academic and research libraries.

The *ARL Annual Salary Survey 1997-98* is available for $35 to member libraries and $70 for nonmembers (plus $6 shipping and handling per publication), and is available on standing order. Please contact ARL Publications, Department #0692, Washington, DC 20073-0692; tel.: (202) 296-2296; e-mail: <pubs@arl.org>. —*Ken Rodriguez, Co-compiler and Co-editor*, ARL Annual Salary Survey 1997-98.

ARL Academic Librarians, FY 1997-98 *

	Women	Men	Combined
Average Salary	$46,888	$50,171	$48,090
Average Years of Experience	16.6	17.0	16.8
Total # of Filled Positions	4,438	2,561	6,999
Minority Librarian's Avg. Salary (U.S. only)	$44,896	$49,002	$46,036
Total # of Minority Librarians	510	196	706
Total # of Directors (filled positions)	49	59	108

*Excludes medical and law libraries.
Source: *ARL Annual Salary Survey 1997-98*

ARL Activities

Lee Anne George, ARL Program Planning Officer

Winners Announced in 1997–98 LC/Ameritech National Digital Library Competition

The following seven projects were funded in the second round of the Library of Congress/ Ameritech program to fund the creation of cultural digital library collections as part of its "National Digital Library Program."

With a gift from Ameritech, the Library of Congress is sponsoring a three-year competition to enable public, research, and academic libraries, museums, historical societies, and archival institutions (except federal institutions) to create digital collections of primary resources. Eleven institutions received seven awards in the second year of the competition. The postmark deadline for the third competition year is November 2, 1998. Specific Guidelines for the last round will be available in July 1998. For further information, see the competition homepage at <http://memory.loc.gov/ammem/award/>.

Chicago Historical Society
Haymarket Affair: Chicago Anarchists on Trial
Approximately 5,500 pages/images including the complete original transcripts of the proceedings of the historic Haymarket trial; the evidence books; the original draft autobiographies written by two of the Haymarket defendants; and numerous pamphlets, accounts, and pictorial portrayals of the events in the popular press of the time. Contact person: Bernard Reilly, (312) 642-5035, <reilly@chicagohistory.org>.

Duke University
The Emergence of Advertising in America, 1850-1920
Eight thousand five hundred images relating to the history of advertising including Eastman Kodak ads, tobacco related posters and insert cards, and ephemera representing ads for bicycles, patent medicines, and food. Contact person: Ellen Gartrell, (919) 660-5836, <gartrell@duke.edu>.

Nebraska State Historical Society
Prairie Settlement: A Story of Determination
Two thousand five hundred glass plate negatives of images recording the process of settling Nebraska between 1886 and 1912, and approximately 3,000 pages from diaries and letters written by the Oblinger family as they moved from Indiana to settle in a sod house on the Nebraska prairie. Contact person: Jill Marie Koelling, (402) 471-4409, <koelling@nebraskahistory.org>.

Northwestern University
North American Indian Photographs by Edward S. Curtis
One of the best recognized and most significant records ever produced of the culture and daily life of about 80 Native American tribes, captured in 2,222 plates. Contact person: Richard Frieder, (847) 491-4672, <frieder@nwu.edu>.

University of Iowa
Traveling Culture:
Circuit Chautauqua in the Twentieth Century
Thirty-eight thousand talent flyers and promotional pamphlets representing text and images from performers and public speakers, including educational, cultural, and religious lecturers; politicians; and vaudeville and variety acts. Contact person: Carol Hughes, (319) 335-5900, <carol-hughes@uiowa.edu>.

University of Miami
Reclaiming the Everglades:
South Florida's Natural History, 1884-1934
A consortial collection that includes materials from the University of Miami, Florida International University, and the Historical Museum of South Florida. The collection documents the history of South Florida, especially the Everglades, a unique subtropical ecosystem that has a rich, but troubled history. Contact person: William E. Brown, Jr., (305) 284-3247, <wbrown@umiami.ir.miami.edu>.

University of Washington
American Indians of the Pacific Northwest
A consortial collection that includes materials from the University of Washington, the Eastern Washington State Historical Society in Spokane, and the Museum of History and Industry in Seattle. The collection consists of 2,350 pictorial images and 6,000 pages of selections from manuscripts, printed ephemera, and journal articles concerning Native Americans of the Pacific Northwest from 1763 to 1920. Contact person: Gary Menges, (206) 543-1929, <menges@u.washington.edu>.

Honors

Arnold Hirshon, Vice-Provost for Information Resources at Lehigh University, was named the 1998 recipient of the Hugh C. Atkinson Memorial Award.

Allen B. Veaner, former Library Director at UC-Santa Barbara, was named ACRL 1998 Academic/Research Librarian of the Year. He is currently adjunct Assistant Professor in the School of Library Science at the University of Arizona.

UT-Austin: The Perry-Castaqeda Library Map Collection on UT Library Online <http://www.lib.utexas.edu/Libs/PCL/Map_collection/Map_collection.html> was selected by *Library Journal* as one of the ten Best Reference Web Sites for 1997. The PCL Map Collection is the only educational ".edu" site chosen for the year—all of the other sites were ".org," ".gov" or ".com" sites.

TRANSITIONS

UC-Berkeley: Penny Abell was appointed the Interim University Librarian, effective July 1.

UC-Irvine: Gerald J. Munoff was appointed University Librarian at the University of California-Irvine, effective July 1. He was previously Deputy Director of the University Library, University of Chicago.

UC-Santa Barbara: Joe Boissé, University Librarian, will be unable to return from disability leave and has finalized his plans for retirement.

CISTI: Bernard Dumouchel was appointed Director General of the Canada Institute for Scientific and Technical Information, effective May 11.

Illinois at Urbana-Champaign: University Librarian Robert Wedgeworth has announced his plan to retire as of August 1999.

Iowa State: Olivia M. A. Madison has accepted the appointment as Dean of Library Services. Her appointment begins July 1.

NYU: Carlton Rochell, Dean of Libraries, has announced his intention to retire as soon as a successor can be appointed. Following the appointment of a new dean, he will serve as Executive Publisher of the NYU Press for a short time before his formal retirement from the University.

Syracuse: Peter S. Graham will become University Librarian, effective September 1. He is currently the Associate University Librarian for Technical and Networked Information Services at Rutgers University.

Western Ontario: Joyce Garnett was appointed Director of Libraries, effective July 1. She was previously Executive Director of University Advancement at Laurentian.

ARL Staff

Lee Anne George, formerly Librarian for Information and Document Delivery Services at Harvard College Library, joined the ARL staff in May as ARL Program Planning Officer for a two-year appointment. Lee Anne will be assuming some of Jaia Barrett's responsibilities during her time in Kiev, including assisting in planning ARL membership meetings, developing the periodic ARL program activity reports, and preparing the annual ARL program plan.

Richard K. Johnson was named SPARC Enterprise Director, effective June 15. Rick will lead the business and strategic development of SPARC, the Scholarly Publishing & Academic Resources Coalition. Rick comes to ARL from Congressional Information Service, Inc. (CIS), a subsidiary of LEXIS-NEXIS, a Reed Elsevier company, where he had been Vice-President of Planning and Development.

Other Transitions

EDUCAUSE: Brian L. Hawkins was selected to be the first CEO for EDUCAUSE, the new higher education information technology association formed by the consolidation of Educom and CAUSE, as of June 1. Hawkins was previously Senior Vice-President for Academic Planning and Administrative Affairs at Brown University.

Dr. Carole A. Barone was named a Vice-President at EDUCAUSE, where she will focus on the National Learning Infrastructure Initiative. She has served as Associate Vice-Chancellor for Information Technology at the University of California-Davis.

NEA: On May 21, the full Senate confirmed the appointment of William J. Ivey as Chairman of the National Endowment for the Arts. He was Director of the Country Music Foundation in Nashville, and replaces NEA former chair Jane Alexander.

OCLC: Robert L. "Jay" Jordon was named President and Chief Operating Officer of OCLC, Inc. becoming OCLC's fourth president in its 31-year history. He began in May on the retirement of K. Wayne Smith, who stepped down after nearly 10 years. He was previously President, New Business Development, Information Handling Services Group.

US National Commission on Libraries and Information Science: Robert S. Willard was named Executive Director by Jeanne Hurley Simon, Chair of NCLIS. Willard's career includes experience as a marketing executive for legal publishing companies and as staff for the Information Industry Association. Jane Williams, Acting Executive Director of NCLIS from May 1997 to February 1998 resigned to take a position at the University of Maryland Library in College Park.

The Senate confirmed the reappointment of Jeanne Hurley Simon as NCLIS Chair.

ARTHUR CURLEY, 1938–1998

Arthur Curley, Director Emertius of the Boston Public Library, died March 31, 1998. He had served as Director of the Boston Public Library from 1985 to 1996 and as a member of the ARL Board of Directors from 1989 until 1992. He was ARL President in 1991.

ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Co-editor: Lee Anne George, Program Planning Officer
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL Calendar 1998–99

1998

July 27–28	**ARL Board Meeting Washington, DC**
October 7–9	ARL/OLMS Facilitation Skills Institute Washington, DC
October 13–16	**ARL Board and Membership Meeting Washington, DC**
October 13–16	Educom'98 Orlando, FL
October 27–28	ARL/OLMS Leading Change Institute Chicago, IL
November 2–4	OLMS/DORAL Management Institute for Development Officers Baltimore, MD
November 5–6	Workshop on Licensing Electronic Information Resources Kansas City, MO
November 16–19	ARL/OLMS Library Management Skills Institute I: The Manager Washington, DC
December 7–8	CNI Task Force Meeting Seattle, WA
December 8–11	CAUSE98 Seattle, WA

1999

February 11–12	**ARL Board Meeting Washington, DC**
May 11–14	**ARL Board and Membership Meeting Kansas City, MO**
July 26–27	**ARL Board Meeting Washington, DC**
October 12–15	**ARL Board and Membership Meeting Washington, DC**

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A BIMONTHLY NEWSLETTER OF RESEARCH LIBRARY ISSUES AND ACTIONS

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SPARC AND CHEMISTS TO COLLABORATE ON NEW REDUCED-COST JOURNALS

The American Chemical Society (ACS), the world's largest scientific society, is the first Scholarly Publishing & Academic Resources Coalition (SPARC) publishing partner in an innovative collaboration aimed at distributing research results faster and at significantly less cost to library subscribers. ACS—a non-profit scientific society that currently publishes 26 peer-reviewed research journals—will collaborate with SPARC to publish at least one new scientific journal each year for the next three years. SPARC is a newly formed alliance launched with support from ARL member libraries.

On June 30, ARL signed a memorandum of understanding with ACS to set out the terms by which SPARC and ACS will proceed. The agreement frames an ongoing working relationship. At a press conference announcing the partnership, Duane E. Webster, ARL Executive Director, declared it "a major step forward in resolving the debate between libraries and publishers over academic journal costs and access, especially as the benefits and challenges of electronic publishing become more evident." He noted that the Coalition's aim is to substantially reduce the cost of scholarly publication while shortening the time required to deliver information, especially in the form of journals.

"Today we replace debate with dialogue and action, moving forward together to make cutting-edge scientific research available to the academic community in the most efficient and cost-effective way possible," said Robert D. Bovenschulte, ACS Director of Publications. "We're especially pleased to be the first scientific publisher to enter into a partnership with SPARC, a creative, forceful, and welcome initiative by ARL. We're also confident that this collaboration will result in publishers being able to offer higher quality products than are currently available."

The first new journal will publish letters in organic chemistry both online and in print. Under the agreement, SPARC members advise ACS by identifying the subject area of interest, and, in return, the participating libraries will help provide instant market acceptance by endorsing the project and ensuring purchase of the new publication.

Richard K. Johnson serves as Enterprise Director for SPARC, which is seeking additional publishing partners. "One of the key advantages SPARC offers to a publishing partner," said Johnson, "is the commitment of Coalition members to subscribe to SPARC products. This reduces the time to market acceptance and cost-recovery of a new title."

Currently comprised of 98 member libraries with a purchasing power of nearly $500 million, SPARC was created as a result of the growing concerns among librarians and researchers over the rising cost of academic publications, particularly scientific journals. Library materials budgets, which have increased over the past decade at almost seven percent a year, have not been able to keep pace with the 12-percent annual increase in the average price of science journals. Both the high prices and steep annual increases charged by some major scientific publishers have forced libraries to cancel thousands of journal subscriptions, prompting publishers to raise prices even higher to make up for the loss.

The advent of electronic publishing has also been a concern for both publishers and librarians, despite its distinct advantages over print in terms of delivery time,

Pictured at the June 30, 1998 signing of the publishing agreement are (clockwise from left): Duane Webster, ARL Executive Director; Richard Johnson, SPARC Enterprise Director; Kenneth Frazier, Director of the University of Wisconsin Libraries and Chair of the SPARC Working Group; and Robert Bovenschulte, Director of the ACS Publications Division.

additional features, and flexibility. Higher subscription costs, licensing agreements for access, and the uncertainty of archiving all have been sources of increasing tension between academic publishers and their customers.

The new organic letters title will include the enhanced features that ACS developed for all of its 26 journals that it began offering on the World Wide Web last year. The most important of these is "Articles ASAP" (As Soon As Publishable), which releases journal articles on the Web as soon as they are finished, accelerating publications by two to 11 weeks over print.

ACS announced additional services this year that will help improve the cost efficiency to the subscriber or non-subscriber, such as free access to tables of contents since January 1996; supporting information on experimental details, also at no charge; and the option to purchase single articles without subscribing. ACS also altered its licensing arrangements with academic libraries, eliminating restrictions on use of the web editions of ACS journals in interlibrary loan programs.

"We are very pleased to have the prestige and power of ACS in this first partnership," said Kenneth Frazier, Director of the University of Wisconsin Libraries and Chair of the SPARC Working Group. He continued, "ACS publications are generally higher quality and more heavily cited by researchers, and they are considered among the more reasonably priced scientific journals. We hope that other scientific publishers—both non-profit and for-profit—will recognize the significance of this collaboration and join us in this effort to fundamentally change academic publishing."

SPARC FOUNDING MEMBERS

as of August 3, 1998

University of Alberta
University of Arizona
Arizona State University
Auburn University
Brigham Young University
University of British Columbia
Brown University
University of California–Berkeley
University of California–Davis
University of California–Irvine
University of California–Los Angeles
University of California–Riverside
University of California–San Diego
California Digital Library
Canada Institute for Scientific and Technical Information
University of Chicago
University of Cincinnati
University of Colorado
Colorado State University
Columbia University
University of Connecticut
Cornell University
Dartmouth College
University of Delaware
Duke University
Emory University
University of Florida
Georgetown University
University of Georgia
Georgia Institute of Technology
University of Guelph
Harvard College Library
University of Houston
University of Illinois–Chicago
University of Illinois–Urbana
Indiana University
Iowa State University
Johns Hopkins University
University of Kansas
Kent State University
Laval University
Linda Hall Library
Louisiana State University
McGill University
McMaster University
University of Manitoba
University of Maryland
University of Massachusetts
Massachusetts Institute of Technology
University of Miami
University of Michigan
Michigan State University
University of Minnesota
University of Missouri
University of Nebraska
University of New Mexico
New York University
University of North Carolina
North Carolina State University
Northwestern University
University of Notre Dame
Ohio University
Ohio State University
University of Oklahoma
Oklahoma State University
University of Oregon
University of Pennsylvania
Pennsylvania State University
University of Pittsburgh
Princeton University
Purdue University
Rice University
Rutgers University
University of Saskatchewan
University of Southern California
Southern Illinois University
State University of New York–Albany
State University of New York–Buffalo
State University of New York–Stony Brook
Syracuse University
Temple University
University of Tennessee
University of Texas
Texas A&M University
Texas Tech University
University of Toronto
Tulane University
University of Utah
Vanderbilt University
Virginia Tech
University of Washington
Washington State University
Washington University
University of Waterloo
Wayne State University
University of Western Ontario
University of Wisconsin
York University

Affiliates

Association of College and Research Libraries
Canadian Association of Research Libraries (Association des bibliothèques de recherche du Canada)

S·P·A·R·C

THE SCHOLARLY PUBLISHING & ACADEMIC RESOURCES COALITION

WHAT IS SPARC?

SPARC, the *Scholarly Publishing & Academic Resources Coalition*, is a newly formed alliance of libraries that aims to foster expanded competition in scholarly communication.

Launched with support from membership of the Association of Research Libraries (ARL), SPARC has begun creating "partnerships" with publishers who are developing high-quality but economical alternatives to existing high-price publications.

By partnering with publishers, SPARC seeks to:

- **create a more competitive marketplace**;
- **reduce the prices of journals**;
- **ensure fair use** and educational and library uses of electronic resources; and
- **apply new technologies** to improve the process of scholarly communication and to reduce the costs of production and distribution.

HOW WILL SPARC ACCOMPLISH THIS?

SPARC will influence the marketplace positively by encouraging publishers to enter markets where the prices are highest and competition is needed most—primarily in the science, technical, and medical areas.

Through its activities, SPARC will reduce the risk to publisher-partners of entering the marketplace, while providing faculty with prestigious and responsive alternatives to current publishing vehicles.

To accomplish this, SPARC will:

- **solicit and encourage the introduction of new publications** of high quality and fair price;
- **guarantee a subscription base** and market new products to potential subscribers;
- **provide start-up capital** (in selected cases); and
- **generate support for SPARC projects** from distinguished faculty, educational organizations, professional societies, and scholarly publishers.

LIBRARY SUPPORT IS NEEDED

SPARC will finance its efforts through coalition member fees that support operating expenses and help build a capital fund to provide start-up money for SPARC projects. SPARC will also seek grant money to augment the capital fund.

The key to SPARC's success, however, will be the commitment of coalition members to support SPARC-endorsed products.

Although the impetus for SPARC grew out of ARL member initiatives, SPARC membership recently was opened to other libraries.

WANTED: PUBLISHER PARTNERS

SPARC is taking action to create a competitive market for scholarly publishing. It will concentrate its resources on supporting ventures in which the gain from introducing price and service competition is great.

SPARC seeks partners that are committed to fair pricing, intellectual property management policies that emphasize broad and easy distribution and reuse of material, and the ethical use of scholarly resources.

Priority will be given to innovative applications of information technology that enrich and expand research and scholarship; assure that new channels of scholarly communication sustain quality requirements and contribute to promotion and tenure processes; and enable the permanent archiving of research publications and scholarly communication.

Potential partners in SPARC include:

- **Professional societies and university presses** interested in launching new publishing initiatives.
- **Start-up electronic publishers** that have already created publications in subject fields dominated by commercial publishers.
- **For-profit enterprises** that offer new strategies for controlling prices and improving access to research information.
- **"Visionary" enterprises,** including both discipline and institution-based server models, seeking to create entirely new economic models for scholarly communication.

(Continued on next page)

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S·P·A·R·C

THE SCHOLARLY PUBLISHING & ACADEMIC RESOURCES COALITION

(Continued from previous page)

WHO BENEFITS?

SPARC aims to stimulate creation of better, faster, and more economically sustainable systems for distributing new knowledge. These advances will benefit:

- **Researchers.** SPARC will encourage development of high-quality, lower-cost delivery channels, which will drive expanded access.
- **Society.** Research conducted by faculty at universities—often with the aid of government funds—propels key advancements benefiting the economy. SPARC aims to facilitate improved and expanded communication of this research.
- **Publisher-partners.** Working with a variety of publishers whose business goals are compatible with SPARC, SPARC will support development of a vibrant and economically viable new model of scholarly communication.
- **Libraries.** By fostering development of new alternatives to established high-price journals, SPARC encourages the kind of competition that will bring skyrocketing journal prices back to earth. Libraries will get more for their money.

CURRENT STATUS

Endorsements

The concept of SPARC has been endorsed by these leading academic organizations:

- Association of American Universities (AAU)
- National Association of State Universities and Land Grant Colleges (NASULGC)
- Association of American University Presses (AAUP)
- Big 12 Provosts

Oversight

The development of SPARC is being guided by a formal working group and steering committee, chaired by Ken Frazier, University of Wisconsin at Madison. Formation of an advisory committee of leaders in higher education, scientific disciplines, scholarly publishing, and business is targeted for fall 1998.

Membership

SPARC now has 98 Founding Members from among the 121 ARL member libraries. Founding Members have each made a financial commitment to the start-up of the SPARC enterprise. On July 28, the ARL Board endorsed a plan to open SPARC membership beyond ARL to other libraries and organizations. (For membership information, see the SPARC website.)

Affiliates

These organizations have supported SPARC by becoming affiliates:

- Association of College & Research Libraries
- Canadian Association of Research Libraries (Association des bibliothèques de recherche du Canada)

Business Development

SPARC development efforts already are off to a promising start:

- A full-time SPARC director was hired.
- A first partnership agreement has been negotiated with the American Chemical Society that calls for the creation of several new journals that challenge established high-price titles.
- Negotiation of additional partnerships is underway.

MORE INFORMATION

For more information about SPARC, contact:

Richard K. Johnson
SPARC Enterprise Director
21 Dupont Circle, NW, Suite 800
Washington, DC 20036

Tel: 202-296-2296
Fax: 202-872-0884
E-mail: rick@arl.org
URL: www.arl.org/sparc/

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STATISTICS & MEASUREMENT

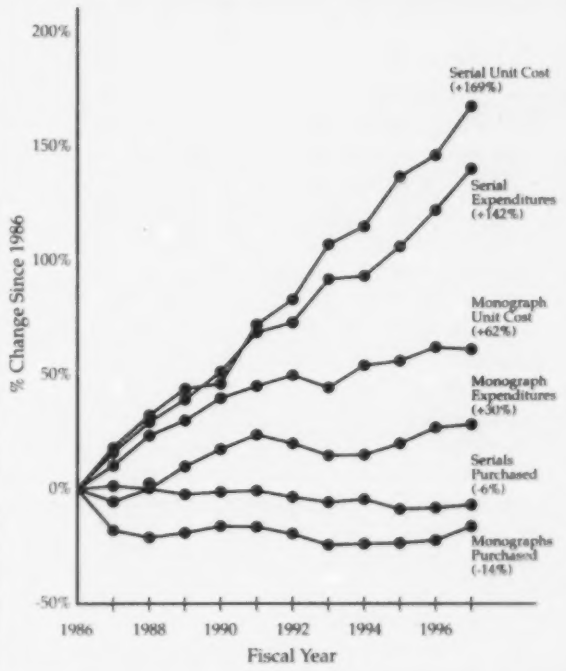
Julia Blixrud, Senior Program Officer

STILL PAYING MORE; STILL GETTING LESS

The most recent edition of *ARL Statistics* documents the continuing struggle by research libraries to keep up with serial and monograph costs. Specifically, ARL data for 1996/97 show that, while ARL libraries more than doubled expenditures for serials from 1986 to 1997, they purchased 6% fewer serial subscriptions. During the last decade, libraries shifted expenditures from monographs to serials to meet some of the demands of increasing serial prices, reducing the number of monographs purchased by 14%, while the unit cost for monographs increased by 62%. Since 1986, the annual average increase for the serial unit cost has been 9.4% and for the monograph unit cost 4.5%, both higher than the general inflation trends in North America during the same period.

Annual statistics for university libraries have been collected since 1908 and represent the oldest and most comprehensive continuing library statistical series in North America. Machine readable datafiles dating from 1908 are available on the ARL ftp server at <http://www.arl.org/stats/arlstat/mrstat.htm>. The 1996/97 publication describes the collections, staffing, expenditures, and service activities for the 121 ARL member libraries. To order, contact <pubs@arl.org>.

MONOGRAPH AND SERIAL COSTS IN ARL LIBRARIES, 1986–1997



MEDIAN VALUES FOR TIME-SERIES TRENDS

Year	Serial Unit Cost	Serial Expenditures	Monograph Unit Cost	Monograph Expenditures	Serials Purchased	Monographs Purchased
(# of Libraries)	(43)	(103)	(63)	(99)	(43)	(63)
1986	$88.81	$1,517,724	$28.65	$1,120,645	16,198	33,210
1987	$104.30	$1,770,567	$31.76	$1,064,484	16,518	27,214
1988	$117.25	$1,979,604	$35.63	$1,141,226	16,443	26,541
1989	$128.47	$2,130,162	$37.74	$1,241,133	16,015	27,268
1990	$130.81	$2,304,744	$40.26	$1,330,747	16,182	27,999
1991	$152.43	$2,578,309	$42.04	$1,400,738	16,149	28,027
1992	$162.72	$2,630,827	$43.31	$1,353,865	15,846	27,158
1993	$184.71	$2,919,756	$41.78	$1,295,807	15,463	25,583
1994	$191.13	$2,932,091	$44.51	$1,309,807	15,583	25,803
1995	$211.29	$3,133,885	$45.27	$1,365,575	14,942	25,719
1996	$219.46	$3,393,307	$46.73	$1,444,015	15,069	26,262
1997	$238.69	$3,674,368	$46.42	$1,460,234	15,297	28,658
Annual average percent change	9.4%	8.4%	4.5%	2.4%	-0.5%	-1.3%

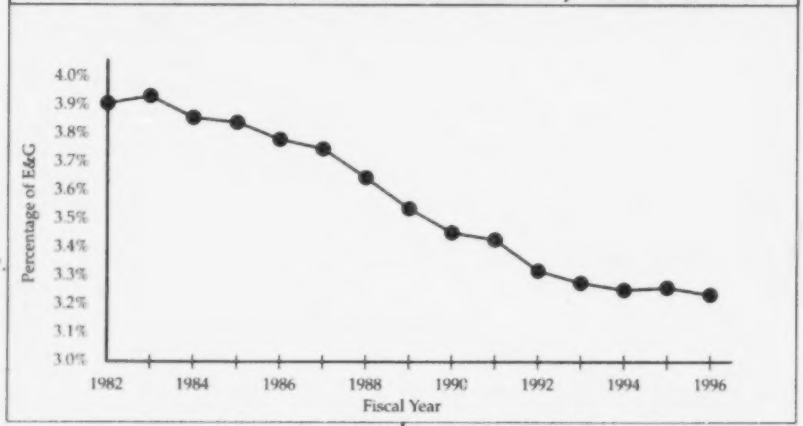
UNIVERSITY FUNDING FOR RESEARCH LIBRARIES

by Julia Blixrud, Senior Program Officer

In January 1994 (*ARL* 172), using a decade of data about total university educational and general expenditures (E&G) and ARL academic library expenditures, Kendon Stubbs, University of Virginia, provided a detailed analysis of the trends of the library expenditures as a percent of university E&G expenditures. This analysis revealed a "widespread decrease in the proportion of university funding directed to research libraries, averaging over half a percent of E&G expenditures from 1982 through 1992."

Data from the most recent E&G report to the ARL academic membership shows that the downward trend continues, although the rate of descent has been much less over the last four years than previously.

ARL LIBRARY PERCENTAGE OF E&G EXPENDITURES FOR 88 LIBRARIES, 1982–1996



For the 102 ARL university libraries providing data on library expenditures as a percent of university E&G expenditures in 1995/96, the mean figure is 3.23% and the median is 2.90%. For U.S. private university libraries (26 institutions reporting), the mean is 2.96% and the median is 2.77%, while for the U.S. state university libraries (65 institutions reporting) the mean is 2.95% and the median is 2.82%. For the 11 Canadian institutions reporting, the mean is 5.47% and the median is 4.86%.

Caution should be used in interpreting the E&G figures because the method for calculating university expenditures is not entirely consistent among institutions, nor is the university figure necessarily calculated on the same basis as that for the library. University figures are as reported to the U.S. National Center for Educational Statistics, Integrated Postsecondary Education Data Systems (IPEDS) Finance form, Section I, Part B, line 12, column 3. There is a variation in how the IPEDS definitions are applied on individual campuses. University figures typically include fringe benefits, buildings, and maintenance. Library expenditures are as defined and reported in the *ARL Statistics* and usually do not include maintenance, fringe benefits, and information resources purchased through other accounts (for example, the computing center).

Canadian institutions attempt to provide university data comparable to the U.S. IPEDS categories. However, the financial accounting systems in the two countries may be fundamentally incompatible. For example, Canadian universities may not count as direct expenditures certain allocated federal monies, because those grants accrue to individual researchers rather than being transferred or reimbursed to the university via the institutional budget. Thus, Canadian university expenditures, as reported, may not include all funds spent in support of the institution. This lower "total" may in turn create a misleading figure for the library's percentage of the institution's funds. (Canadian expenditures are expressed in U.S. dollars at the rate of 1.3613 Canadian dollars to one U.S. dollar, the average monthly noon exchange rate given in the *Bank of Canada Review* for the period July 1995–June 1996.)

The 1996 report will complete this trend series due to changes in the accounting and financial reporting standards issued by the Financial Accounting Standards Board (FASB). With FY 1996-97, FASB has changed the IPEDS Finance Survey forms, the source for E&G data. There are currently two forms, one for private institutions (Form IPEDS-F1-A) that incorporates the accounting changes, and another form for public institutions (Form IPEDS-F-1), which is, for now, the same as in previous years. ARL has already noted from reports received from private institutions that the changes have generally resulted in an increased university expenditure figure and thus have a negative impact on the library percentage. Some public institutions will be testing their new form this year and next year both public and private institutions are expected to be completing the same form. Since the 88 libraries whose data is used to create the chart are a mix of public and private institutions, the ARL trend series cannot be calculated in this interim period.

Electronic data for this time series and a copy of the summary chart that illustrates the trend line are available also on the ARL website at <http://www.arl.org/stats/eg/>.

PRESERVATION

Mary Case, Director, Office of Scholarly Communication

LIBRARY OF CONGRESS MASS DEACIDIFICATION PROGRAM

by Kenneth E. Harris, Preservation Projects Director, Preservation Directorate, Library of Congress

In 1996, for the first time since the Library of Congress began its search for a mass deacidification process 20 years ago, LC moved beyond evaluation and testing and began to deacidify books from the Library's collections. In a contract with Preservation Technologies, the Library committed itself to deacidify 72,000 books over an 18-month period. By late May 1997, the U.S. Congress approved a new Mass Deacidification Action Plan that enabled the Library to (1) incorporate deacidification into the Library's existing arsenal of preservation options, (2) extend the existing contract while negotiating a multi-year contract to deacidify significant quantities of important endangered books from the Library's collections, and (3) continue to offer companies the opportunity to have the Library evaluate and test other viable, operational mass deacidification processes. Following are highlights of the LC Mass Deacidification Program in 1998.

Library Awards Book Preservation Contract

With strong support from the U.S. Congress, the Library of Congress has provided leadership in the development and evaluation of deacidification processes on a mass scale and their application to increasingly larger volumes of books and other paper-based items to achieve economies of scale. Through a competitive process, the Library has negotiated a second contract for mass deacidification. The contract was awarded to Preservation Technologies, Limited Partnership (PTLP) of Cranberry Township, a suburb of Pittsburgh, Pennsylvania. The company will provide book preservation services to the Library using the firm's Bookkeeper mass deacidification process. This contract runs through October 2001. It is an outgrowth of a two-year, limited production contract that enabled the Library to deacidify about 100,000 books and to resolve many book selection, shipping, and quality control details of the deacidification program.

Production Incentives: LC Encourages Others to Mass Deacidify Library & Archival Materials

Within four years, the Library will deacidify up to 275,000 books. Under an incentive plan, the per-book treatment cost will decrease as the number of books deacidified increases. The Library encourages other institutions to prolong the useful life of invaluable library collections and archival holdings through mass deacidification, either by negotiating separate agreements or by forming with other institutions partnerships that could achieve economies of scale through the treatment of large quantities of materials.

Selection Criteria and Procedures

Deacidification treatment is reserved for books that are acidic and at risk of loss if no action it taken. Due to its role as the national library and the official library of the U.S. Congress, the Library is focusing primarily on selection of "Americana" for early treatment under the mass deacidification program, emphasizing the selection of endangered volumes from collections that are central to the Library's mission.

Quality Controls

The deacidification process, utilizing magnesium oxide (MgO) to neutralize acid in the paper, takes two hours from the time books are placed in the Bookkeeper III treatment cylinders until the volumes are ready to be packed for return to their home library. All steps in the process, from selection to reshelving, are monitored to ensure that the intended results are achieved. The Bookkeeper process meets the Library's basic preservation requirements by:

- raising the pH level of treated paper to the acceptable range of 6.8 to 10.4 pH;
- achieving a minimum alkaline reserve of 1.5% or more; and
- extending the useful life of paper (measured by fold endurance after accelerated aging) by over 300%.

Manuscript Deacidification Equipment

Preservation Technologies has designed new equipment that it intends to use to offer deacidification services for loose manuscript and archival materials. The Library hopes to perform tests to evaluate the effectiveness of this new equipment in treating manuscripts and other paper-based materials in non-book formats and will be pleased to share the results with other libraries and archives.

Additional Information

More information and data about the Library's mass deacidification program is available at the following Internet address: <http://lcweb.loc.gov/preserv/>. At that site, select "Research and Testing Online" to access a number of reproduced publications about deacidification, including an informative, illustrated article that appeared in the April 1997 *Library of Congress Information Bulletin*.

LIBRARY OF CONGRESS "DEMONSTRATION SITE"

Given the effective operation of its mass deacidification program for books over the past two years, the Library of Congress is serving as a demonstration site for managers and technical staffs from other libraries, archives, and cultural institutions. Anyone interested in learning firsthand about administrative and work flow procedures required for mass deacidification programs should contact Kenneth E. Harris, Preservation Projects Director, Preservation Directorate, Library of Congress, LM-G21, Washington, DC 20540-4500.
Phone: (202) 707-1054;
Fax: (202) 707- 3434;
E-mail: <khar@loc.gov>.

FEDERAL RELATIONS

Prudence S. Adler, Assistant Executive Director-Federal Relations and Information Policy

W.I.P.O. LEGISLATION UPDATE *JULY 21, 1998*

On Friday, July 17, the House Committee on Commerce approved the Digital Millennium Copyright Act of 1998 (DMCA), H.R. 2281. This is the legislation to implement the World Intellectual Property Organization (W.I.P.O.) treaties by updating U.S. copyright law for the digital environment. The bill as crafted by the Committee on Commerce is significantly different than H.R. 2281, as approved by the House Committee on the Judiciary as well as the Senate-passed S. 2037. In addition to provisions included in S. 2037 and the House Committee on the Judiciary bill, this legislative package reflects a broader set of interests, such as those relating to fair use, privacy, and encryption research.

Changes to the bill followed well over a week of intensive negotiations by members of the library, education, copyright proprietor interests, and committee staff. The library community was represented by the Shared Legal Capability attorney, Arnold Lutzker of Fish & Richardson. The library and education communities have agreed not to oppose the compromise bill as drafted by the Committee on Commerce with the understanding that copyright proprietor interests will actively support DMCA, other bills such as H.R. 2652 (database protection) will not be included in this package, and this agreement is binding through the Senate conference. It is not clear that these conditions will hold.

In announcing the fair use amendment, Commerce Committee Chairman Bliley (R-VA) stated, "The agreement we have today gives consumers a reliable and regular process that ensures they will have 'fair use' access to information and copyrighted works—without stifling growth of electronic commerce. Digital technology has the potential—and let me emphasize the word 'potential'—to lock up information and works that are otherwise widely available to consumers today. The fact that this is only 'speculative' or 'hypothetical' does not convince me that we should do nothing. Quite the opposite, it raises the possibility that it will inhibit growth in electronic commerce."

An amendment offered by Rep. Klug (R-WI) was incorporated in the DMCA; it has several key elements, including:

- The new access provision which would have prohibited circumvention of a technological protection measure for any purpose, including lawful purposes such as fair use, was dropped from the Commerce-drafted bill.
- In lieu of this statutory "access" provision, a regulatory regime will be in place. The Secretary of Commerce, in consultation with the Register of Copyrights and others, is directed to adopt a regulation no later than two years following enactment of the DMCA that would prohibit circumvention once a formal rulemaking process is completed. This rulemaking would consider "whether users of copyrighted works have been, or are likely to be . . . adversely affected by the implementation of technological protection measures that effectively control access to copyrighted works."
  - — In conducting the rulemaking, the Secretary shall examine several factors, including the availability for use of copyrighted works; their availability for archival, preservation, and educational purposes; the impact of technological protection measures on traditional fair uses, such as scholarship, teaching, and research; the effects of circumvention of technological measures on the market for or value of copyrighted works; and such factors as the Secretary and others consider appropriate.
  - — If the Secretary finds that an adverse impact is demonstrated or is "likely" on any particular class of copyrighted works, such as journal articles, this class would be exempt from the prohibition on circumvention for the following two years to permit "lawful uses."
  - — The Secretary, in consultation with the Register and others, shall conduct a rulemaking every two years and evaluate the waivers of certain classes of works, if applicable.

In addition to the Klug amendment, there are several other key provisions included in the Committee on Commerce bill. Many of the provisions originated in the Senate-passed bill and include:

- a framework for online service provider liability;
- the ability to use digital technologies for preservation purposes;
- the ability to circumvent in order to engage in encryption research;
- permission to circumvent to protect personal privacy;
- a study to consider distance education opportunities and the impact of such programs on copyrighted works in the networked environment; and
- a study to examine the implications of online service provider liability for educational institutions.

Since the House Committee on the Judiciary and the Committee on Commerce bills differ, there will need to be consultation between the Committees to resolve these differences prior to the bill reaching the House floor. In addition, there will need to be a similar conference to sort through the differences between the House and Senate W.I.P.O. legislation. The House bill could reach the floor prior to the Congressional recess in early August. Given the highly charged political atmosphere surrounding this legislation, it will be important to retain a legislative package that is balanced.

DIVERSITY

DeEtta Jones, Senior Program Officer for Diversity

ARL APPLAUDS THE 1997-98 CLASS OF THE LEADERSHIP AND CAREER DEVELOPMENT PROGRAM

The pilot experience of ARL's Leadership and Career Development (LCD) Program has been a tremendous success. The Program exposes participants, mentors, and ARL faculty to a breadth of knowledge with significant opportunities for in-depth exploration. The LCD Program consists of several components: two one-week Institutes, a research project, a mentoring relationship, and finally, a closing ceremony. The closing ceremony for the 1997–98 LCD Program class was held July 25 in Washington, D.C., just before the ALA Conference. Directors, mentors, supporters, and ARL staff joined together as LCD Program participants and faculty shared their impressions of the Program and celebrated its success.

LCD PROGRAM CLASS OF 1997-98

From left to right, Back row: Poping Lin, Jon Cawthorne, Gloria Rhodes, Valerie Wheat, Tracey Joel Hunter, Carlos Rodriguez, Mark Winston, Julia Blixrud (ARL); Center row: Thura Mack, Barbara Lehn, Vicki Coleman, Maria de Jesus Ayala-Schueneman, Patrick Dawson, Neville Prendergast; Front row: Janice Simmons-Welburn, DeEtta Jones (ARL), Elayne Walstedter, Johnnie Love, Denise Stephens, Janet Lee-Smeltzer, Nerea Llamas, Glendora Johnson-Cooper, Teresa Neely, Kathryn Deiss (ARL).

The 21 LCD Program participants have and continue to attest to the long-term value of having participated in this Program. Participants have also committed to sharing their insights and their enhanced leadership skills as mentors to ALA's Spectrum Initiative Scholars, a program established to encourage and assist minorities pursuing library science degrees. This first group of LCD Program participants helps the library community to appreciate the future of librarianship, more fully explore synergistic learning, and truly understand the value of programs for developing and giving professional visibility to research librarians from diverse backgrounds.

As we applaud the efforts of the 1997-98 class of participants, we also applaud the efforts of the leaders of academic and research libraries, information science schools, and associations that contributed significantly to the Program's development and success. In addition, we thank the Department of Education and Institute of Museum and Library Services for their invaluable financial support.

Next Steps

ARL is now working with the LCD Program participants to complete their research projects and publish or otherwise give visibility to their project results. *Leading Ideas*, a new ARL publication series that focuses on diversity, leadership, and career development, was created through the Diversity Program as a vehicle for highlighting the participants' research; it is available at <http://www.arl.org/diversity/leading/index.html>. In order to assess the Program's impact, ARL maintains contact with participants, regularly monitoring and tracking their career paths. Furthermore, the participants continue to network through an electronic discussion list and are maintaining relationships with their LCD Program mentors.

There is a clear need for and interest in continuing the Leadership and Career Development Program. Strategies for deploying resources and securing funding for future classes are currently being addressed by the ARL membership. This opportunity is expected to be available again for 1999-2000.

For more information about the ARL Leadership and Career Development Program, visit the website at: <http://www.arl.org/diversity/lcdplist.html>.

OFFICE OF LEADERSHIP & MANAGEMENT SERVICES

Kathryn Deiss, OLMS Program Manager

NEW FROM THE OLMS INFORMATION SERVICES PROGRAM

by Patricia Brennan, ARL Publications Officer

To order copies of any of these titles, contact the ARL Publications department at <pubs@arl.org>.

SPEC Kits

Use of Teams in ARL Libraries
SPEC Kit 232, July 1998
compiled by George J. Soete, ARL/OLMS
A notable trend in academic library management in recent years is the movement toward use of teams. Eighty-three libraries responded to a February 1998 SPEC survey that sought to determine the extent to which teams are being utilized and/or whether ARL libraries are becoming team-based organizations. While only five libraries described themselves as team-based, the majority of respondents indicated that they have both permanent and project teams in place. In addition to describing the characteristic features of teams, the survey also addressed training and assessing team effectiveness. The Kit includes both a listing of teams currently in place in ARL libraries and representative documents, such as team definitions, a team-building handbook, and team training manuals.

Customer Services Programs in ARL Libraries
SPEC Kit 231, May 1998
compiled by George J. Soete, ARL/OLMS
This SPEC Kit reports on the extent to which ARL libraries engage in formal or organized customer service programs, programs that focus, in highly specific ways, on the people libraries serve. The most common characteristics of such programs in ARL libraries are staff training efforts focused on effective customer service, regular data-gathering about customers and their needs, and written customer service policies. Included in the Kit are the survey results; documentation from member libraries, such as patron service manuals, case studies, principles for service statements, and needs assessments surveys; and a selected reading list.

Affirmative Action in ARL Libraries
SPEC Kit 230, June 1998
compiled by Joseph Diaz and Jennalyn Tellman, University of Arizona Library, in collaboration with DeEtta Jones, ARL
An examination of the extent to which ARL Libraries have affirmative action policies or programs in place, this SPEC Kit includes documentation on employment policies, instructions for hiring and interviewing staff, guidelines for search committees, appropriate interview questions, sample statistical reports, and recruitment plans. Included also is an extensive list of resources, such as newsletters, articles, electronic lists, and other publications.

Evaluating Academic Library Directors
SPEC Kit 229, May 1998
compiled by George J. Soete, ARL/OLMS
Performance evaluation is a widely acknowledged tool for monitoring and promoting effective leadership, an essential ingredient for success in any library organization. This SPEC survey examined factual attributes of director review processes, including frequency of review cycles, participants, and outcomes as well as level of satisfaction with the processes. Included in the Kit are the survey results and documentation from member libraries such as sample review forms and procedures from responding institutions. In addition, a feature of this Kit is "A Checklist of Recommendations." See also Occasional Paper #21, described below.

Organization of Document Collections and Services
SPEC Kit 227, April 1998
compiled by Cynthia Clark and Judy Horn, University of California at Irvine
This survey examined how collections, technical services, and public services for government documents are currently organized in ARL libraries; the extent to which document collections are being reorganized; and the impact of such reorganizations. Survey results indicated that the major motivations for change in documents collections is the desire to improve workflow and services, the increased availability of bibliographic records, and the growth of electronic publications. Included in the Kit are the survey results and documentation from member libraries, including organizational charts, sample websites, and planning and policy documents.

SPEC Kits: ISSN 0160-3582, $40 ($25 ARL members). SPEC Flyers summarizing SPEC Kits are available via the ARL web at: <http://www.arl.org/spec/speclist.html>.

OLMS Occasional Papers

Educational Background of Systems Librarians
OLMS Occasional Paper #20
by Jean Dorian, April 1998, ISBN 0-918006-32-5, 49 pp., $25 ($18 ARL members)
Although the impact of automation on library staff as a whole has attracted a great deal of attention during the past two decades, the emergence of a new specialization within the profession—systems librarianship—has remained relatively unexamined. In December 1995, a survey of systems librarians in ARL libraries was conducted to provide more information about the manner in which these positions have developed; the educational qualifications and training required; their place within the organizational structure of the library; and the long-term prospects of systems librarians.

Evaluating Library Directors: A Study of Current Practice and a Checklist of Recommendations
OLMS Occasional Paper #21
by George J. Soete, May 1998, ISBN 0-918006-34-1, 48 pp., $25 ($18 ARL members)
The project to study the performance evaluation processes for ARL directors began in 1997 and included a SPEC Survey, available as SPEC Kit 229. This paper expands on the survey to include additional analysis of survey results as well as the findings from telephone interviews with ARL library directors. The interviews report on directors' perceptions of their review processes as well as suggestions for how these processes may be improved. In addition, the current roles and responsibilities of library directors are examined. The paper also includes a reading list and a checklist of recommendations, available online at: <http://www.arl.org/oms/checklist.html>.

ARL Activities

Lee Anne George, ARL Program Planning Officer

Photo credit: Elaine Studio

ARL Honors K. Wayne Smith

On June 29, ARL presented K. Wayne Smith, retiring President and CEO of OCLC Online Computer Library Center, Inc., with an award honoring his many distinguished contributions to research libraries and the scholarly community. The award was presented by ARL President James Neal, Johns Hopkins University, and ARL Executive Director Duane Webster during the OCLC President's Luncheon in Washington, D.C. The award acknowledged that during his years at OCLC Dr. Smith was an innovator, a coalition-builder, and a catalyst for change. His visionary leadership resulted in improved access to information and in reduced costs for managing that information.

Dr. Smith forged successful partnerships with research libraries to build a cooperative base for delivering technological innovations for integrating local systems and OCLC services. Of great importance to North American research libraries are the powerful enhancements in the OCLC Interlibrary Loan System and groundbreaking initiatives in the publishing and archiving of electronic information resources.

In the words of the award, "K. Wayne Smith astutely confronted the challenges of managing the largest library computer network and guided the transformation of OCLC into a global organization and the world's foremost bibliographic database."

Dr. Smith was the third president of OCLC. He served the corporation for nearly ten years.

Honors

Miriam A. Drake, Georgia Institute of Technology, was awarded an honorary Doctor of Library Science degree by Simmons College. The award was presented at a ceremony in Boston on May 17, and recognized her professional vision, scholarship, and leadership as well as the impact she has made on higher education and the field of library and information science.

David Kohl, University of Cincinnati, and **William Potter**, University of Georgia, received the 1998 Blackwell's Scholarship Award from the Association for Library Collections & Technical Services for their pair of articles on library consortia which appeared in the Winter 1997 issue of *Library Trends*.

Maureen Sullivan, OLMS Organizational Development Consultant, became the 61st President of the Association of College and Research Libraries on June 30. As President of ACRL, Maureen will promote her theme of Leadership of Learning.

Winston Tabb, Library of Congress, received the Melvil Dewey medal from the ALA at its annual conference. The Dewey medal is given annually to recognize creative professional achievement of high order and was awarded to Winston in recognition of his work with the LC Program for Cooperative Cataloging.

Wayne State University: The Shiffman Medical Library was awarded the 1998 Innovation in Instruction Award by ACRL for the program Health Sciences Information Tools 2000.

Transitions

Association of American Universities: Nils Hasselmo began as President July 1. Previously the President of the University of Minnesota, he replaces Cornelius Pings, who announced his retirement last year. Pings had been AAU president since February 1993.

Association of Research Libraries: Deborah Jakubs was appointed Director, Collections Services at Duke University, effective September. Since 1996 she has been a Visiting Program Officer at the Association of Research Libraries, leading the Global Resources Program funded by the Mellon Foundation. In her new capacity at Duke, Deborah will continue as head of the ARL Global Resources Program but with a somewhat reduced time commitment.

Trish Rosseel, Librarian/Analyst for the Electronic Library Network in British Columbia, joins the OLMS as Visiting Program Officer August 17. She will investigate uses of technology for delivering training electronically.

ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036. 202-296-2296. FAX 202-872-0884. <http://www.arl.org/>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Co-editor: Lee Anne George, Program Planning Officer
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year

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ARL Calendar 1998

October 7–9	ARL/OLMS Facilitation Skills Institute *Washington, DC*
October 12–14	Workshop on Electronic Publishing of Data Sets on the WWW *Charlottesville, VA*
October 13–16	**ARL Board and Membership Meeting** ***Washington, DC***
October 13–16	Educom'98 *Orlando, FL*
October 19–20	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Edmonton, Alberta*
October 22–23	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Denver, CO*
October 27–28	ARL/OLMS Leading Change Institute *Chicago, IL*
November 2–3	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Ottawa, Ontario*
November 2–4	OLMS/DORAL Management Institute for Development Officers *Baltimore, MD*
November 5–6	Workshop on Licensing Electronic Information Resources *Kansas City, MO*
November 12–13	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Chapel Hill, NC*
November 16–19	ARL/OLMS Library Management Skills Institute I: The Manager *Washington, DC*
December 7–8	CNI Task Force Meeting *Seattle, WA*
December 8–11	CAUSE98 *Seattle, WA*

ARL

A BIMONTHLY NEWSLETTER OF RESEARCH LIBRARY ISSUES AND ACTIONS

200 SPECIAL ISSUE ON JOURNALS October 1998

VIEWS OF THE CURRENT MARKETPLACE FOR SCHOLARLY JOURNALS

by Mary M. Case, Director of the ARL Office of Scholarly Communication

Scholarly research is the life-blood of the advancement of knowledge. Faculty, universities, societies, federal agencies, research institutions, publishers, and libraries all play a role in supporting the creation and dissemination of that research. Broad, easy, and early access to research findings facilitates the work of the practicing scientist, while access to quality-controlled, permanently available articles provides the basis for reward systems, cross-disciplinary investigation, graduate study, and the historical record. However, the formal and informal systems of scholarly communication that have grown up to support the advancement of knowledge are in jeopardy as a result of market forces—most visible in scientific journals publishing—that are reducing access to the published literature in all disciplines.

Librarians are acutely aware of the dynamics in the market for academic journals. Price increases for a serial subscription for a research library have averaged 9.5% a year over the past decade. Despite infusions of funds into serials budgets, libraries have been unable to keep pace with the steep price increases. As a result, libraries have had no choice but to cancel significant numbers of journal subscriptions and to reduce monographic purchasing, decimating their collections. Many believe the exploitative practices of a few large commercial companies operating in a near monopolistic market are the fundamental cause of high prices.

In 1988, ARL contracted with the Economic Consulting Services (ECS) to conduct a serials prices study. Using best estimates available, ECS concluded that the increasing costs of production and the growing size of the journal titles could not fully account for a large portion of the prices charged by four commercial publishers. In 1997, a 20 -year study of scientific journals by Tenopir and King (*Journal of Scholarly Publishing* 28.3: 171-79) came to a similar conclusion and attributed an unknown but significant proportion of price increases to the pricing practices of commercial publishers. Studies within individual disciplines have time and again demonstrated higher costs per character and per page of some commercially published journals when compared to journal titles published by societies or other non-profit groups.

Library responses to this growing body of research about the extent and nature of price increases for scholarly journals have been multifaceted. National and international library conferences have drawn attention to the research findings and explored possible solutions. On the local level, librarians have combined campus experience with the literature published about the research to help inform faculty and students about the financial challenges and choices inherent in managing serial collections. Over time, this process of informing and educating research library users, boards, and funding agencies has contributed to a broadening circle of awareness about dysfunctions in this marketplace. This awareness has finally reached into the offices of faculty, provosts, university presidents, and antitrust authorities in the U.S. and Europe.

With this awareness has emerged a sense that the entire system of scholarly communication is in danger of collapsing unless there is concerted effort by the academic community to promote less expensive channels for publication, dissemination, and archiving of scholarly research.

SPECIAL ISSUE ON JOURNALS

Continued

This special issue of the ARL newsletter explores the nature of the journals market in depth and presents strategies for challenging the status quo. Earlier issues of this newsletter have reported on ARL's commitment to SPARC (the Scholarly Publishing & Academic Resources Coalition) as a strategy to create partnerships with publishers who are developing high-quality and yet economical alternatives to existing high-priced publications and to foster expanded competition in scholarly communication. ARL views SPARC as one strategy among many for addressing the complex issues involved in the current scholarly publishing system. The four articles that follow in this issue of the newsletter propose additional, complementary strategies that libraries, faculty, universities, and the academic community as a whole may pursue to keep challenging the current marketplace.

We begin the issue with a report by Mark McCabe, an economist formerly with the U.S. Department of Justice (DOJ). McCabe presents the preliminary findings of the DOJ's work to develop a new model for understanding the competitive impact of publisher mergers on the academic journals market. Librarians' outcry at the proposed Reed Elsevier/Wolters Kluwer merger encouraged the DOJ to look beyond its established criteria for evaluating publishing mergers and to explore whether other dynamics were operating that would permit mergers of relatively modest size to cause competitive harm and higher prices. Librarians across the country spent hours on the phone with McCabe and his legal colleagues at the DOJ as they attempted to understand how libraries behave as a market. Subsequently, staff in over 50 ARL libraries provided DOJ with data on the holdings of over 3,000 journal titles for a ten-year period. Some of these staffs worked overtime for two weeks to gather the information from manual records. These data, combined with that collected elsewhere by the DOJ, allowed McCabe and his colleagues to develop and test models by comparing projected effects with the actual effects of previous mergers and acquisitions. Based on this testing, McCabe outlines here his new portfolio theory of journal pricing that suggests that "publisher mergers of relatively modest size can cause competitive harm.". While the Reed Elsevier/Wolters Kluwer deal was ultimately abandoned by the companies, several other publisher mergers have come before the DOJ. McCabe will therefore continue his research for the DOJ even as he takes on a new position as an assistant professor at the Georgia Institute of Technology.

McCabe's work helps us to understand the dynamics of the marketplace in scholarly journals publishing. It may lead the DOJ to some future action that will protect the academic community from the anti-competitive practices of some publishers. Most importantly, it will replace some of our speculations with fact, allowing us to develop even more effective strategies.

In the second article, Brendan Wyly, a librarian in the Johnson Graduate School of Management Library at Cornell University, uses publicly available data to analyze the financial health of four major publicly traded companies that have significant scholarly publishing operations. Wyly describes the measures of profitability found in these companies' annual reports and concludes that the profits of some of the major commercial publishers of scholarly journals are, in a word, exceptional. He also concludes that these profits confirm a lack of competition in the marketplace. His response is to call for a new system of scholarly communication, created primarily by universities, that provides the kinds of innovations that will lure authors away from commercial publishers and end reliance on journal purchasing in a non-competitive market.

Regardless of what we may think about their price, commercial publications, according to Louisiana State University Library's Stanley Wilder, are of less value to faculty than society publications when measured against the revenue they generate. Wilder presents the specific case of chemistry, where he finds that commercially produced journals account for 74% of the revenue generated by a core set of chemistry titles but contribute only between 22-35% of the value. The response? He calls for a change in philosophy of those academic librarians who currently pursue comprehensiveness in collecting scientific and technical journal literature. He recommends instead placing value at the heart of scientific and technical collecting and relegating lower value literature to more cost-effective document-on-demand acquisition.

Concluding this issue is a report from Mike Sosteric, a faculty member of Athabasca University's Centre for Global and Social Analysis and founding director of the new International Consortium for Alternative Academic Publication (ICAAP). Sosteric writes in practical terms about the very real barriers to independent scholarly publication and describes how the recently formed ICAAP plans to tackle these barriers in order to develop an international alternative scholarly communication system outside of the commercial mainstream. Most noteworthy about ICAAP is that it is a faculty-initiated project intended to facilitate cultural change in faculty editors and authors while promoting the acceptance of independent publishing outlets. Sosteric calls on research libraries and their institutions to join this Canadian-based, international initiative.

ARL's Office of Scholarly Communication welcomes community response to these proposals for influencing the current marketplace for academic journals. We realize that there are many other worthy initiatives, which we will feature in upcoming OSC newsletter columns. Moreover, we will continue to promote and facilitate actions such as these that complement and reinforce the agenda of SPARC.

The Impact of Publisher Mergers on Journal Prices: A Preliminary Report

by Mark J. McCabe, Assistant Professor of Economics, Georgia Institute of Technology

When I was asked by the Department of Justice (DOJ) to consider the potential competitive impact of a number of publishing mergers on the market for academic journals, my initial reaction was, frankly, one of skepticism. I thought to myself, *Hundreds of unique titles exist and the number of publishers is immense.* The first step in antitrust analysis is defining the market in order to determine whether a monopolist could in fact wield power in this market. In scholarly publishing, doesn't each *unique* journal title constitute a distinct market for the purposes of antitrust analysis? Certainly no one would argue that articles in *Brain Research* could be easily substituted for ones in the *New England Journal of Medicine*, much less those in the *American Economic Review*. If each title corresponds to an antitrust market, then owners of individual titles already have the capacity to achieve monopoly returns; a corollary is that mergers don't matter. Furthermore, even if markets are defined somewhat more broadly, say, to include titles whose content overlaps, the likelihood that two publishers (among dozens) would together control sufficient content in enough subject areas to warrant antitrust scrutiny seemed small.

I conveyed these first impressions to my legal colleagues at the DOJ, and, well, they were not particularly enamored with this point of view. Their initial discussions with university librarians across the country as they began their investigations into the proposed Reed Elsevier/Wolters Kluwer merger had revealed a certain (high) level of agitation over persistent journal price inflation during the past decade or more. Furthermore, the librarians' ire was focused on a small number of large publishing houses (large in the sense that they had large portfolios of titles) whose price "leadership" had helped decimate their budgets and imperil scholarship at their institutions.

So, what was to be done? The Antitrust Division had recently evaluated a number of publishing mergers (Thomson/West, for example). As a result of these investigations, several of my economist colleagues at DOJ had concluded that measuring book or journal *content* differentiation was an appropriate method for evaluating the impact of increased concentration in these types of markets; that is, only if two or more journals were close substitutes might there be any potential concern.[1] In other words, their approach paralleled my own initial impressions! Obviously, if companies were behaving anti-competitively in this market, we would have to break new ground to determine how and why.

But first, what about alternative explanations for the persistent price increases of journals? For example, perhaps the price inflation reflects increased costs. However, an extensive review of the relevant literature (published largely in the library science field) revealed that the actual costs of journal editing and printing seemed not to have suffered any unusual run-up during the past decade. Another potential and more compelling explanation relies on a simple application of supply and demand analysis. Our interviews with libraries indicate that university budgets for periodicals are relatively fixed in a given year so that "large" increases in the population of available titles might induce librarians to cancel *some* titles as they add new, more desirable journals to their collections (this "population" invariably increases over time). And since each issue of a journal involves certain fixed editorial costs in addition to variable printing costs, a persistent decline in a title's circulation will eventually force firms to raise prices as they attempt to cover the fixed costs of publication. In other words, everything else equal, a smaller subscriber base necessitates higher prices. Of course, the interesting feature of this explanation is that entry by new journals is a source of price inflation.[2] "Demand" for new titles eventually results in higher prices across the board.

Roger Noll, Morris M. Doyle Centennial Professor of Economics at Stanford University, is an advocate of this hypothesis. To test the hypothesis, he collected price, quality, and circulation data for a sample of journals that were included in the Institute for Scientific Information indexes in a number of fields (for the period 1978-88). After estimating supply and demand equations, he found that supply was downward-sloping, i.e., price and circulation were inversely related. Since entry by new journals reduces demand for existing journals, this estimated "system" predicts increased prices with entry. It should be noted that Noll's analysis does not determine what portion of journal price inflation is due to entry (presumably this could be assessed by measuring the change in journal population during his sample period). Furthermore, his system estimation indicates that significant price inflation has occurred *independent* of changes in circulation. That is, even after accounting for the effect of circulation on prices, there remains a large unexplained increase in prices.

The existence of this "unexplained" residual inflation opens the door for additional and complementary theories. Over the past six or seven months, I began initial development and testing (with some assistance from a DOJ colleague, David Reitman) of a portfolio theory of journal pricing that suggests that publisher mergers of a relatively modest size can cause competitive harm. The remainder of this brief report summarizes this work.

Some Views of the Marketplace for Academic Journals

The Demand Side

First, some useful facts regarding what the DOJ inquiry found about the demand for academic journals. Purchase of academic journals by libraries is generally based on two factors—price and expected usage. To assemble and maintain their collections, most libraries appear to construct a cost per use ratio for each title.[3] Given a budget for a relevant academic field, e.g., medicine, they then proceed to rank journals from lowest to highest in that field according to this ratio, and identify a cutoff above which titles need to be canceled. Conversely, if their holdings in the relevant field do not exhaust the budget, additional titles can be purchased until the budget constraint is met. From year to year, as budgets and titles' usage change, collections are adjusted accordingly. Over the past decade or so the general trend is for increases in library budgets to lag journal price inflation; a consequence is that many library collections have suffered a fair amount of attrition.

The most interesting aspect of library journal acquisition, of course, is that individual titles within a given field are considered simultaneously. So, for example, medical libraries group titles from various sub-fields, e.g., neurology, biochemistry, clinical medicine, etc., into a single "portfolio" and broadly apply the cost per use criterion. Thus, titles compete with each other for budget dollars across an entire field rather than across a narrow sub-field, as intuition might otherwise suggest (an intuition based on the perspective of the typical user of journal materials, and a basis for my initial skepticism). Furthermore, since journals are highly differentiated even within sub-fields, libraries try to purchase as many titles as possible (except for the most widely used journals, libraries purchase no duplicate subscriptions).

Publishers' Pricing Strategies

Given this demand structure, how do publishing firms price their journals? First, there exist at least two types of journal companies—commercial and non-profit—that have different strategies. In general, the latter are mostly intent on disseminating knowledge, whereas the former are primarily interested in profits. Here I assume that the non-profit firms set prices to cover costs (and are thus ignored in the analysis that follows). David Reitman and I have both considered how this question might be answered for commercial firms. Although our analyses differ in certain details, they should be seen as complementary.

David's model

David assumes that a continuous distribution of library budgets exists, i.e., libraries have unique budgets that can be ordered from smallest to largest. He shows that each journal company (owning a *single* journal title) will set prices so that higher quality journals will exhibit lower cost per use ratios. Given n journals, these can be ranked from lowest to highest in terms of cost per use by libraries, with the lower quality journals (that have higher cost per use) purchased by relatively high-budget libraries. Conversely, higher quality journals (that have lower cost per use) are purchased by most libraries.[4]

The intuition for this particular ordering is that higher quality imparts a "cost advantage" that makes it more profitable to price low and sell widely. Given this strategy, lower quality, or "high-cost," journals find it most profitable to price high and sell to fewer, relatively high-budget libraries. Note that although the latter firms could match the "low-cost" firms' prices, this strategy is less profitable than targeting the smaller base of well-endowed customers.[5]

Mark's model

My approach differs from David's primarily in the assumed distribution of budgets. I consider a finite set of discrete library budget classes; each class is populated by one or more libraries. The number of journals exceeds that of budget classes (one motivation for this approach is that, in the case of medicine, for example, the number of journals is much larger than the population of academic libraries in the U.S.). Given these assumptions, my model shows that single-title journal firms targeting the same budget class set prices so that their cost per use ratios are identical to each other; for higher budget classes this ratio increases. Furthermore, given some set of journals of varying quality, higher quality journals will generally target the lower budget classes, resulting in lower cost per use ratios (as in David's approach). The intuition for these results is the same as before: higher (lower) quality implies a cost (dis) advantage, which dictates a lower (higher) price and therefore broader (narrower) circulation.[6]

While both approaches to the question of how publishing firms set their prices are based on single-title commercial journal firms, they set the stage for future analysis of larger portfolio firms.

Implications for Mergers

Under David's scenario, mergers between firms controlling two adjacent journals—i.e., journals with adjacent cost per use ratios—result in higher prices post-merger, and therefore a change in the holdings of libraries. Mergers between firms with non-adjacent journals (at least in the few simulations that David performed) appear to have no impact on prices. This is probably due to the fact that a given journal's price is constrained by the next higher journal, in terms of cost per use. Relaxing this constraint benefits the lower cost per use journal but hurts the higher cost per use journal.

Mergers of firms with non-adjacent journals are less profitable since the lower cost per use journal's pricing is still constrained by an adjacent journal(s) that is not involved in the merger.

Under Mark's scenario, mergers between firms that control two journals that target the same budget class or adjacent budget classes may be profitable. In other words, mergers do not have to involve journals of adjacent quality. Note that with this approach some prices increase while others decrease, depending on whether or not a journal switches budget class post-merger. For example, consider a merger between firms with two journals in the same budget class. The price of the lower quality journal of the two involved in the merger is raised enough so that the libraries in this budget class would cancel the journal and replace it with one of lower quality that is now more attractive in terms of price. Using the low-cost analogy, the introduction of this relatively "high-cost" journal allows the rest of the journals in this class (including the high quality journal owned by the merged firm) to raise prices. Depending on the parameters, the corresponding increase in profits for the merged firm may or may not outweigh the losses incurred by its lower quality journal.

Briefly, our results for journals sold by commercial publishers indicate that prices are indeed positively related to firm portfolio size, and that mergers result in significant price increases.

Much work remains to be done here, including the analysis of larger portfolio firms and the interplay between price inflation and budgets that was alluded to earlier.

Testing the Portfolio Theory

During the course of our investigation at DOJ we collected a range of data in order to test the portfolio theory of journal pricing. We collected price data for some 3,000 journals, holdings information from various libraries, and quality information from the Institute for Scientific Information (ISI) (for the period 1988-98) across a number of academic fields for ISI-ranked journals. Since our progress was greatest for medical journals,[7] my discussion is focused in that subject area. In 1998, the number of ISI-ranked medical journals published by commercial firms exceeds 1,000.

The sample period, 1988-1998, is useful in at least two respects. First, it is sufficiently long to assess whether inflation continues to plague the journal market (and it dovetails nicely with Noll's sample). Second, the period contains a number of natural experiments, i.e., publishing mergers, that help us distinguish between different "types" of portfolio effects: the effect of internal growth versus that due to acquisition. We speculate that internal growth due to entry may produce benefits (such as coverage of an otherwise uncovered field) that help offset any intentional competitive harm; any harm associated with acquisitions, on the other hand, is less likely to be balanced by substantial benefits—titles are simply reshuffled, and any fixed cost savings seem to be small.[8]

We adopted a reduced form or hedonic method of estimation, where prices are regressed on several factors: firm portfolio size, journal quality (measured by ISI citation level), a Brandon-Hill dummy (the Brandon-Hill journal list[9] indicates essentially whether a journal is a general or specialized title and is thus an exogenous measure of circulation "potential"), and a number of variables that capture the effects of residual price inflation and idiosyncratic firm-specific effects. For further technical details see the short empirical appendix that follows.

Briefly, our results for journals sold by commercial publishers indicate that prices are indeed positively related to firm portfolio size, and that mergers result in significant price increases. For one specific transaction we investigated—Wolters Kluwer and Waverly—the results predicted an average price increase of between 20-30% for the affected medical titles. What is particularly noteworthy are the modest portfolio sizes involved. Based on the total number of ISI journals sold by commercial publishers (with portfolios of ten titles or greater), Wolters Kluwer and Waverly have shares equal to about 11% and 5%, respectively. Contrary to the *current* rule of thumb in antitrust—the combined shares of the merging firms typically need to approach 35-40% before measurable effects arise—these shares are relatively modest.[10] An explanation for this anomalous result is that unlike most markets, where buyers purchase a product from *one* of several sellers, in the market for journals, buyers purchase titles from as many sellers as possible. This strategy delivers more market power to "small" firms, hence the large impact from modest-sized mergers.

Finally, even after controlling for the effects of firm size and other variables, there remains significant residual price inflation. One explanation is that our portfolio approach and Noll's entry story are complementary—both factors contribute to the observed price inflation separately.[11] And the residual price inflation in each estimation reflects the impact of the omitted factor,

whether it be firm portfolio size or declining circulation. Clearly, one important avenue to pursue in the future is how these two factors should be incorporated into a single estimation (the medical libraries holdings data should be useful in this regard since it provides snapshots over time of how journal circulation changed for a representative sample of libraries).

Implications and Future Directions

When the proposed merger between Reed Elsevier and Wolters Kluwer foundered earlier this year, opposition from antitrust authorities in Europe and the U.S. was cited as a primary cause. Although no formal complaints were filed by agencies on either side of the Atlantic, regulators had sent a variety of signals indicating their serious concerns. Negotiations with the European Union had progressed the farthest and it appeared that the proposed deal would proceed only if the parties agreed to significant divestitures. It was widely reported at the time that the EU's preferred set of divestitures upset the financial logic of the merger and resulted in its demise.

What is interesting here is that the EU's main focus was *not* on academic journals, but rather on legal publishing (in Europe), and that its theory of anti-competitive harm was based on traditional antitrust principles, i.e., excessive overlap in content (and therefore similar to the DOJ's approach to the Thomson/West merger).

The U.S. focus, of course, was far different, in part because European legal publishing was not germane and because the model of harm relied upon was novel. Though one can only speculate on how a U.S. antitrust case might have proceeded, it is clear that the combined Reed Elsevier/Wolters Kluwer entity would have controlled large journal portfolios in a number of broad fields, including biomedicine. Assuming that these broad fields constituted antitrust markets, some of these portfolios would have crossed the U.S. Government's threshold with shares in excess of 35%. Based on the preliminary results discussed here, such a merger would have resulted in substantial price increases over time. If the U.S. had filed a complaint and had been successful with this market definition, an important *legal* precedent would have been set, one that would have made it easier to employ a portfolio theory in mergers involving combined market shares less than the threshold *and/or* a large firm buying a relatively small portfolio of journals (see endnote 10). Unfortunately, since any future deals are likely to be relatively small in scope, opposition to journal mergers will need to be successful in both dimensions: market definition and market shares.[12]

This increased burden is why further refinement of the work started over the last eight months is necessary. Using the price, portfolio and holdings data collected during the course of our investigation, I hope to further develop our portfolio theory and to test the robustness of our initial empirical results. Although antitrust policies in the U.S. and Europe have changed considerably over the past two decades in response to a better understanding of market dynamics, this type of reform requires the development of new and persuasive evidence that existing policies are inadequate.

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Empirical Appendix

Hedonic estimation does not provide estimates of the "structural parameters" from a supply/demand system. This can limit the quality of inference. For example, suppose one regressed auto prices on a set of car characteristics, e.g., horsepower, passenger capacity, transmission type, etc. If we found that car prices were positively associated with horsepower, should we conclude that the cost of additional horsepower is positive or that demand for larger horsepower engines is greater? In the present case, this inference problem is not likely to affect the firm portfolio size parameter. Since a merger should not increase costs, a merger-related price increase in the hedonic framework is demand-related, i.e., a result of enhanced market power.

Another concern whenever "firm size" is specified as an explanatory factor in a price or profits equation is the issue of endogeneity. What determines firm size? If firm size is merely a proxy for some other X-factor (say, lower costs, or skill at introducing new journals) it is possible that any conclusions regarding the negative effects of firm size per se might change if this additional factor(s) were included in the analysis. This problem is most acute with cross-sectional data, since firm-fixed effects are omitted and no changes in the relevant variables can be observed over time (see the *Handbook of Industrial Organization* chapter by Richard Schmalensee on this topic[13]). However, panel data (cross-sectional data over time) of the sort collected here is ideally suited to address these endogeneity concerns. A panel allows us to observe the impact of changes in portfolio size over time, holding firm attributes constant. And to address any lingering concerns that these changes in firm size are masking some X-factor (as noted above), the data allows us to distinguish between increases in firm size due to internal growth versus growth from merger. Since we are able to control for quality changes, a significant (in the statistical sense) post-merger price increase is a good indication of an anti-competitive effect.

Endnotes

[1] For example, as a condition of DOJ approval of the Thompson/West merger, the companies were required to divest a number of law journals in order to reduce the concentration of titles with similar content that would now be owned by the single company.

[2] How much of this "brand proliferation" and its impact on prices is due to anti-competitive intent, rather than more legitimate reasons, is a question that remains to be addressed.

[3] This claim is literally true for medical libraries; though other types of academic libraries may not be as precise in their processes, they appear to behave in similar fashion. In any case, this is an empirical question that can be tested using holdings data (if one examines how a given library's holdings change over time, it should be possible to test whether the changes in holdings correspond to the predictions of a cost per use portfolio model that takes into account journal quality and price).

[4] We used price divided by number of citations as a proxy for cost per use.

[5] For the more technically inclined, David's approach employs a "constrained" Nash equilibrium concept where each firm chooses a price so that journals with higher cost per use ratios have no incentive to undercut.

[6] Again, for the more technically inclined, it should be noted that to demonstrate existence of equilibria in this case it is necessary to think of pricing as part of a two-stage game, i.e., in the first stage firms select the budget class in which they will compete—this might reflect marketing costs and so forth—and in the second stage they choose prices.

[7] When the Reed Elsevier/Wolters Kluwer merger was called off in March 1998, the DOJ refocused their analysis on the pending merger of Kluwer with Waverly Press, a publisher of biomedical journals.

[8] Furthermore, if publishing mergers do result in cost savings, economic theory implies that post-merger prices should *decline*, everything else equal.

[9] Alfred N. Brandon and Dorothy R. Hill, "Selected List of Books and Journals for the Small Medical Library," *Bulletin of the Medical Library Association* 85.2 (Apr. 1997): 111-35.

[10] This rule of thumb is suggested by the government's antitrust guidelines, and helps to explain the recent reluctance of the Antitrust Division to oppose mergers in the publishing industry. Note that even if two merging companies have combined shares in excess of this threshold, one company's market share cannot be trivial, e.g., one or two percent.

[11] These are likely to be "separate" effects since the effects of entry are not firm specific, whereas those of portfolio size are.

[12] Meanwhile, to help avoid future antitrust scrutiny the Elseviers of the publishing world will likely grow by adding relatively small numbers of journals at frequent intervals. If pursued diligently, this stealth strategy can be just as successful as any megadeal.

[13] Richard Schmalensee and Robert D. Willig, eds., *Handbook of Industrial Organization*, Handbooks in Economics 10, Amsterdam; New York: North Holland, 1989.

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Competition in Scholarly Publishing? What Publisher Profits Reveal

by Brendan J. Wyly, Johnson Graduate School of Management Library, Cornell University

As both customers and critics of commercial scholarly publishers, librarians might find useful a summary of the recent finances of the publicly traded companies that have significant scholarly publishing operations. A financial analysis can help us determine if our trust in maintaining long-term relationships with these companies is warranted and at the same time suggest whether our concerns that an anti-competitive market is operating are supported by the data.

Recent Profits of Publicly Traded Scholarly Publishers

The publicly traded companies with significant scholarly publishing operations focused on here are Wolters Kluwer, Reed Elsevier, John Wiley & Sons, and Plenum Publishing. In March 1998, Wolters Kluwer and Reed Elsevier canceled plans to merge. In early June 1998, Wolters Kluwer announced plans to acquire Plenum.

Finding meaning in the measurements of publishing houses requires an understanding of what existing data represent (and/or exclude) and a context for interpreting the data. This summary presents three tables to examine the four companies. The first table looks at the overall size of the companies. The second presents financial ratios to indicate profitability of overall operations. And the third table presents a hypothetical summary of savings for the customers of these companies' scholarly publishing segments had the companies operated their scholarly publishing segments at the median measure of profitability for the periodical publishing industry. Taken together, these figures give a reasonable picture of the profits achieved by these companies from their sale of scholarly materials.

To illustrate the relative size of the companies, Table 1 reports sales, operating income, net income, net income available for common shareholders, and common equity for the four publishers under review as well as for two other companies—Thomson and Microsoft. Thomson is not a major publisher of scholarly journals, but it is a major vendor of other resources to the research library community (for example, Thomson owns Gale Research, Information Access, the Institute for Scientific Information, and West), so it is included for informational and comparison purposes. Microsoft is included as well to provide some basis for comparison as a well-known, highly profitable company operating in a somewhat monopolistic market. (In the March 30, 1998 issue, *Business Week* ranked Microsoft as the most profitable company in the S&P 500 in 1997 based on a variety of measures.)

Continued

In addition to the raw financial figures in Table 1, the financial ratios in Table 2 are presented as they are more informative about the market in which commercial scholarly publishers operate. For comparison, periodical publishing industry ratios are also included in Table 2 for periodical publishing in general (not limited to scholarly publishing). Ratios for the banking and consumer products segments of the S&P 500 are included because they were the most profitable segments in 1997, as measured by net margin and return on equity, respectively.

There is no single ideal measure of profitability, and all of the financial ratios presented in this summary must be considered relative to other companies and industries. Three ratios are particularly useful to customers of these companies:

- **Operating margin** measures how much of each sales dollar customers pay to *all* the beneficiaries of an enterprise over and above the costs incurred in providing the goods or service. Those beneficiaries include stockholders, lenders, and members of society benefiting from taxes on the enterprise. A high operating margin may be needed to cover taxes and provide a return that will attract the necessary capital through lending or stockholding, given the particular risks of the enterprise and alternative investments. Operating margin excludes interest costs/profits that are the result of decisions about how to finance an operation and how to use the income it generates rather than the result of the direct costs and benefits of carrying on an enterprise.
- **Net margin** takes interest and taxes out of the profit consideration so that only common and preferred dividend stockholders are considered as beneficiaries. A high net margin may be necessary if the enterprise is high-risk and requires a considerable capital investment. However, a net margin of profits on sales that is higher than the market norm is a substantial indicator of "high" profits and raises questions about whether a competitive market is operating and, if so, why that particular market supports a higher margin than other markets.

  Both operating and net margins are reported excluding extraordinary financial events that are not expected to recur, such as the one-time costs and benefits of acquisitions, dispositions, legal actions, etc.
- **Return on equity** is the ratio of net income (after payment of preferred dividends) to the net worth or common equity in the enterprise. Return on equity measures income generated for each dollar of capital invested by the ordinary owners who have no special first claim on profits in the form of preferred dividends.

As measured by net profit margin, Plenum Publishing was more profitable in 1997 than 491 companies in the S&P 500, according to *Business Week*. Reed Elsevier's net margin was higher than 473 of the companies in the S&P 500 for 1997. Both Plenum and Reed Elsevier had extraordinary net profit margins compared to the periodical publishing industry as a whole, and Wolters Kluwer was near the upper quartile. However, as noted, high margins on sales may be necessary to earn a sufficient return on the equity that must be attracted. Wolters Kluwer provided a higher return on equity in 1997 than 482 of the S&P 500 companies, Reed Elsevier higher than 448, Plenum higher than 361, and Wiley higher

TABLE 1: SALES, INCOME, AND COMMON STOCK EQUITY FOR THE LATEST FISCAL YEAR REPORTED

	Net Sales	Operating Income (before interest & taxes & excluding extraordinary items)	Net Income (excluding extraordinary items)	Net Income Available for Common Shareholders	Common Shareholder Equity (prior year)
Wolters Kluwer Dec. 31, 1997	$2,569,808,000	$548,101,000	$285,644,000	$285,644,000	$685,235,000
Reed Elsevier Dec. 31, 1997	$5,603,880,000	$1,451,400,000	$998,760,000	$997,120,000	$3,534,570,000
J. Wiley & Sons April 30, 1997	$431,974,000	$34,797,000	$20,340,000	$20,340,000	$117,982,000
Plenum Publishing Dec. 31, 1997	$52,634,000	$17,626,000	$12,824,000	$12,824,000	$63,399,000
Thomson Corp. Dec. 31, 1997	$8,766,000,000	$959,000,000	$579,000,000	$550,000,000	$4,946,000,000
Microsoft June 30, 1997	$11,358,000,000	$5,130,000,000	$3,454,000,000	$3,439,000,000	$6,908,000,000

Source: Respective annual reports and SEC filings.

than 302. Even though Wiley's net margin was relatively modest (4.7%), it excelled in providing a strong return on equity (17.2%). This ability to turn a net margin into a high return on equity is characteristic of the publishing industry in which either a small amount of equity can be put to work to generate considerable sales or the industry leverages equity by borrowing to produce high returns on small equity stakes. In simple terms, this means that publishers either do not need to raise a large amount of capital to produce publications or that publishers borrow what money they need rather than selling equity stakes. A detailed analysis of the origins of these returns on equity is beyond the scope of this article, but a high return on equity is at least a potential indicator that equity holders are benefiting from investing in activities not subject to competitive forces. In combination with other evidence, the return on equity figures help bear out this assessment.

The periodical publishing industry as a whole, at the lower quartile, median, and upper quartile levels, converts margins into return on equity at multiples of three or four times. Wolters Kluwer and Wiley attained these industry levels of performance as measured by return on equity as multiples of their margins. However, because Wiley started from a lower margin, only Wolters Kluwer approached the extremely high return on equity of the upper quartile of the industry. Compared to most other industries, Reed Elsevier fairly efficiently used capital to earn a high return on equity from a very high margin, but it was not nearly as effective with its margin as other top-performing publishers. Plenum did a poor job of converting a very high margin into return on equity; this gives some indication of likely inefficiencies on the part of Plenum relative to the other two companies and relative to periodical publishing in general. However, we cannot definitively state the origins of these return on equity figures without a very detailed analysis of the debt and equity structures of these companies.

If the net margins of Wolters Kluwer, Reed Elsevier, Wiley, and Plenum had been 5.0% (the median in the overall periodical publishing industry as measured by Dun & Bradstreet's *Industry Norms & Key Business Ratios 1997-98*) the customers of the three companies would have saved approximately $884,653,000 in 1997. Alternatively, if the three companies had earned a return on equity of 18.8%, the customers would have saved approximately $490,145,000. Of course, those customers were not all purchasing only scholarly publications from these companies. That raises the issues of how much

TABLE 2: PROFIT RATIOS FOR THE LATEST FISCAL YEAR

	Operating Margin	Net Margin	Return on Equity
Wolters Kluwer* Dec. 31, 1997	21.3%	11.1%	41.7%
Reed Elsevier* Dec. 31, 1997	25.9%	17.8%	28.2%
J. Wiley & Sons* April 30, 1997	8.1%	4.7%	17.2%
Plenum Publishing* Dec. 31, 1997	33.5%	24.4%	20.2%
Thomson Corp* Dec. 31, 1997	10.9%	6.6%	11.1%
Microsoft* June 30, 1997	45.2%	30.4%	49.8%
Periodical Publ. (SIC 2721)†	unavailable	11.5% (upper quartile) 5.0% (median) 1.7% (lower quartile)	54.3% (upper quartile) 18.8% (median) 5.6% (lower quartile)
Consumer/S&P 500** Dec. 31, 1997		9.3%	28.2%
Banks/S&P 500** Dec. 31, 1997		14.5%	15.8%

Sources: *Respective annual reports and SEC filings.
†*Industry Norms & Key Business Ratios 1997-98*, Dun & Bradstreet, data for 280 establishments.
**"Business Week's Industry Rankings of the S&P 500," *Business Week* (30 Mar. 1998): 123.

revenue these companies derive from scholarly publishing (as opposed to their other product lines) and how these companies regard their own scholarly publishing segments.

Company Views on the Scholarly Publishing Market

The annual reports contain some information about the companies' views of the scholarly publishing market and their intentions to focus on this profitable business.

Wiley reports that 47% of revenue for 1997 was derived from science, technology, and medical publishing, consisting of journals, encyclopedias, newsletters, and books: "A fundamental strategy is to develop journals, newsletters, subscription books, multivolume reference works, and other continuity products. Such products serve customers well by keeping them up to date in fast-moving fields of science and technology, and they benefit Wiley by generating predictable income and substantial cash flow." Educational publishing, mainly of undergraduate texts, accounted for 25% of 1997 revenue for Wiley, and professional publications mainly focused on business professionals generated 28% of revenue in 1997.

Plenum reported that in 1997 subscription journals accounted for 63% of sales, books for 26%, and database products for 9%. No particular emphasis is reported on growing one segment relative to another.

Reed Elsevier reports, "The Scientific segment of Reed Elsevier comprises worldwide scientific and medical publishing businesses.... The Scientific segment represented approximately 17% of Reed Elsevier's total net sales and 26% of Reed Elsevier's total operating income before exceptional items for the year ended December 31, 1997. Within the Scientific segment, Elsevier Science contributed approximately 83% of the total net sales in the year ended 31 December, 1997." The fact that Reed Elsevier made only 17% of its total sales in the Scientific segment yet made 26% of its operating income from that segment may in large part explain Reed Elsevier's enthusiastic disposal of most of its operations in the more competitive and less profitable consumer publishing market in favor of focusing on lucrative scholarly publishing.[1] The three profitable sectors, Scientific, Professional, and Business, grew net sales and operating income (at constant exchange rates and before extraordinary items and acquisitions and dispositions) as follows in 1997: Scientific net sales +8% and operating income +12%; Professional net sales +7% and operating income +8%; Business net sales +5% and operating income +11%. Reed Elsevier is clearly good at converting sales in both the Scientific and Business segments into income.

Wolters Kluwer reports that 14% of its sales and 13% of its operating income were derived from the Scientific and Medical publishing segment. The largest and most profitable Wolters Kluwer operations are in Tax and Legal publishing, including not only the CCH divisions but also a very substantial amount of scholarly legal publishing. The profitability of the large, somewhat monopolistic Tax/Legal segment partly accounts for the difference between Scientific/Medical sales at 14% and operating income at 13% of overall operations. The Scientific/Medical segment is very profitable for Wolters Kluwer, and they have been concentrating on growing it through acquisitions, including the planned acquisition of Plenum. The other quite profitable sector is Business publishing, which includes some scholarly publishing. The Educational and Trade publishing sectors are much less profitable in terms of operating margins. In the following calculations of scholarly publishing profit ratios (Table 3), only the Scientific/Medical sector finances are included for Wolters Kluwer, although they clearly derive income from scholarly publishing in other sectors that is not specifically quantified in their reporting. Wolters Kluwer's 1997 annual report includes a section on "Developments in the Markets" that states, "We are furthermore facing sustained competition from 'non-publishers' in the field of information provision." There is no elaboration on this interesting point that seems to have significance especially for the Tax/Legal and Scientific/Medical segments.

Since indications are that scholarly publishing is among the most profitable segments for these companies, a very conservative assumption is that their overall net incomes derive from scholarly publishing in proportion to their sales or operating margins in that segment. Because the capital investment for scholarly publishing is relatively low, it is also conservative to estimate that equity is invested in the scholarly publishing segments in proportion to the sales that derive from those segments. By recalculating scholarly publishing sales, assuming the periodical publishing industry median of 5.0% net margin or an industry median of 18.8% return on equity, it is possible to calculate the savings or costs to scholarly publishing customers of these companies' profits beyond or below industry medians. These hypothetical savings and costs to scholarly publishing customers are shown in Table 3. (Complete tables from which these calculations were derived are available in the online version of this article <http://www.arl.org/newsltr/200/wyly.html>.) Where segment data is not available, the conservative assumptions outlined above are used so that these calculations are based on the scholarly publishing sales figures for Wiley at 47% of total sales, Plenum at 63%, Wolters Kluwer at 14%, and Reed Elsevier at 17%; and the scholarly publishing operating and net incomes for Wiley at 47% of the totals, Plenum at 63%, Wolters Kluwer at 13%, and Reed

Elsevier at 26%. Reed Elsevier dominates these figures in sheer costs to customers because of its size; therefore, to make clear the proportional savings within each company's customer base, the hypothetical percentage savings on scholarly sales is also shown for each company. By these proportional measures, Reed Elsevier still clearly dominates these measures of profits beyond the periodical publishing industry medians, and the Reed Elsevier profits are on such large sales that they raise the overall effect when the totals of all four companies are combined.

It is noteworthy that Wiley's profits in scholarly publishing are essentially similar to the periodical publishing industry overall. Reed Elsevier in particular is probably profiting from the structural differences between the market for scholarly publishing versus the market for periodical publications more generally. Plenum's relatively inefficient use of capital is illustrated again here by the dramatic contrast between the savings as calculated on industry-standard net margin versus industry-standard return on equity. Wolters Kluwer is considerably more profitable in its scholarly publishing businesses than the periodical publishing industry median ratios. However, Plenum's high margins and inefficient use of high margins and Reed Elsevier's high margins and high return on equity stand out as worthy of our attention as customers.

Discussion

The financial performance of vendors is of interest to (potential) customers for several reasons. On the positive side, a financially sound company can be more safely relied upon if the intention is to build a long-term relationship. The profitability of a vendor may also indicate the superiority of its products and services or a better understanding of the market served. If a competitive market is operating, the very definition of a free market means that successful companies succeed for these reasons. Therefore, the financial performance of a vendor can help to guide purchasing decisions by providing information about the collective judgments of the marketplace of customers.

However, if a competitive market is not operating, the finances of vendors can show the absence of competition. More importantly, the finances of the vendors will provide some measure of the economic consequences for the customers of the lack of a competitive market, as in Table 3. When these consequences are clear, customers may come to understand that they must seek to change the situation, unless the costs of being a buyer in a non-competitive market are relatively small in terms of the overall enterprises of the customer.

The costs of acquiring scholarly information are relatively substantial in research libraries, and even in terms of entire universities' budgets. If we find ourselves being customers in a non-competitive scholarly communication market that is too expensive for our participation in the breadth and depth needed for a healthy scholarly system, what is to be done? When regulation is as unlikely as it is in today's current political environment, and when the product or service is as vital as scholarly information is to research communities, then the customers can only pursue innovations that will end the reliance on buying in a non-competitive market.

SPARC (the Scholarly Publishing & Academic Resources Coalition <http://www.arl.org/sparc/index.html>) seeks to create a competitive environment for scholarly communication by just such innovation both within and beyond the current scholarly publishing system.

In the short term, this financial information *might* be useful in negotiations or debates with commercial publishers. However, the fundamental problem of a lack of competition cannot be addressed through negotiations. Ultimately, research institutions must help to create a

TABLE 3: HYPOTHETICAL SAVINGS OR (COSTS) TO CUSTOMERS BASED ON INDUSTRY-STANDARD PROFITS

(Considering only Selected Scholarly Publishing Operations of Each Company)

	Savings (Costs) Relative to 5.0% Net Margin	% Savings (Costs) from Actual Net Margin	Savings (Costs) Relative to 18.8% ROE	% Savings (Costs) from Actual ROE
Wolters Kluwer	$19,145,000	5.3%	$19,098,000	5.3%
Reed Elsevier	$212,045,000	22.3%	$146,286,000	15.4%
J. Wiley & Sons	($592,000)	(0.3%)	($865,000)	(0.4%)
Plenum Publishing	$6,421,000	19.4%	$570,000	1.7%
Total	$237,019,000	15.3%	$165,089,000	10.7%

system of scholarly communication that is either strongly competitive and commercially based or a system that is not predicated upon the generation of profits from the communication process itself. This summary of publisher finances illustrates in an inexact way the premium paid for relying on the current inherently non-competitive economic model of commercial scholarly publishing. The lack of competition is fairly obvious in the finances of the companies, but the lack of competition can be confirmed by an analysis of how all the participants—authors, readers, and publishers—operate within the commercial scholarly publishing process.

Free markets encourage innovation in the deployment of resources precisely by tolerating extraordinary profits for new enterprises when risks are high and before a competitive market is established. Thus, companies regularly make claims to investors about playing in markets where competition is sparse or non-existent for the moment due to the innovations of the company. However, sustained non-competitive markets in a mature industry are generally an indication of a structural problem in the market that prevents the entry of competitors over time.

In the case of scholarly publishing, the major impediment to competition is that all of the direct incentives for authors lead them to publish in well known channels to reach the largest number of readers without regard to the cost of those channels to the readers. However, the reader is not free to choose new channels because those channels are typically not filled with the same content early in the development of a publication. This system of incentives makes it very difficult to develop competitive communications channels. The customer, i.e., the reader in this economic model, is disempowered *within* the system because the product is "must-have" and "single source."

Reed Elsevier comes close to stating this in Elsevier's 1997 filing with the U.S. Securities and Exchange Commission (20-F), when it notes for investors that the company is increasingly "concentrating on high value-added areas of 'must-have' information and significantly reducing its exposure to the consumer markets." In the consumer publishing market, the publisher produces the content and other publishers can compete by producing similar content themselves. In the scholarly market, the content is produced by authors external to the publisher, and authors are reluctant to move to another publishing channel for any reason other than broader awareness or prestige, which are inherently difficult to produce early in the development of a channel. This is a very positive market situation for a publisher because it avoids competition *so long as the economic model is not disrupted by innovation.* New publishing channels that include technological or structurally innovative features, reach broad audiences, and offer prestige early in the life-cycle might lure authors away from established channels. But perhaps even more importantly, we must keep in mind that the innovation must ultimately disrupt the non-competitive economic model at work in commercial publishing. Improving scholarly publishing functionality with technological innovation will not in and of itself introduce competition. The innovation to change the economic model must focus on developing a structure to align authors' and readers' shared interest in broad dissemination. This is precisely the challenge to the customer community for scholarly communication. We must innovate to produce competitive communication systems over time or continue suffering under a system of shrinking access due to the lack of competition in the present system.

The worst disservice to the research community by the current system of commercial scholarly publishing is that it dooms scholarly research to reach a shrinking audience as commercial publishers profit from the artificial scarcity enforced by high prices. ***The greatest rewards for universities in creating a new system of scholarly communication are in the potential for increased support based on increased awareness of the intellectual products of the universities.***

Universities have excellent reasons for pursuing such innovations. The most important reason is not that the current system is too expensive and cannot handle a steadily increasing volume of scholarly communication. Both of these are serious problems, and even minimizing all non-beneficial "publishing for tenure" is only a short-term mitigating approach in the face of increasing collective knowledge. However, overcoming these problems of cost and volume has a much more important benefit for universities than any potential direct cost savings on library acquisitions. The most important benefit of a changed economic model for scholarly communication falls to universities as producers rather than as consumers: scholarly publishing makes publicly known the value of research of all kinds. Only by making that research known can it be valued and *financially supported* by the various supporters of scholarly enterprise, ranging from corporations to foundations to legislators to other scholars. The worst disservice to the research community by the current system of commercial scholarly publishing is that it dooms scholarly research to reach a shrinking audience as commercial

publishers profit from the artificial scarcity enforced by high prices. *The greatest rewards for universities in creating a new system of scholarly communication are in the potential for increased support based on increased awareness of the intellectual products of the universities.* If any point bears special emphasis in our thinking about the value of innovations in electronic scholarly communication, the value of increasing readership should.

Ease of access to quality information is the fundamental goal of both authors and readers—"producers and consumers," to put it simplistically. When a researcher takes on the maze of literature databases, the frustration of shrinking local library collections, the long-delayed document delivery services, and the shocking copyright fees, it rapidly becomes clear that there has to be a better way, given that the author and the reader share the desire to communicate. Readers and authors are already finding ways around the frustration imposed by the current scholarly publishing system. SPARC and other initiatives give us the opportunity to facilitate and institutionalize that process.

Finally, it should be noted that this article is not intended as an indictment of any particular commercial publisher or all commercial publishers as a group. Indeed, we are finding many for-profit publishers are adopting business philosophies and practices that may ultimately contribute to a more competitive and viable marketplace for scholarly communication.

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Endnote

[1] According to Reed Elsevier's annual report, the operating margin of the Scientific segment ran at 40.28% (1997), 41.77% (1996), and 39.66% (1995) as a percentage of sales. As a point of comparison, Microsoft's operating income as a percentage of sales was 45.17% for 1997, 35.50% in 1996, and 34.33% in 1995.

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Comparing Value and Estimated Revenue of SciTech Journals

by Stanley J. Wilder, Assistant Dean for Technical and Financial Services, LSU Libraries

Academic libraries currently devote about 74% of their chemistry journal budgets to titles produced by commercial publishers. Relative to U.S. association titles, however, commercial titles are generally much lower in value to the academic scientists they serve. The imbalance between the low value of commercial publications and the significant revenue they generate from academic library subscriptions is at the heart of the current crisis in scientific/technical (ST) journal costs.

The Study

These claims are the result of a study of three measures of value (faculty ratings, *Science Citation Index* [SCI] citation counts, and library use) and estimated revenue for a core group of chemistry titles. The list of chemistry titles, the measures of faculty ratings, and the SCI citation counts were derived from a dataset originally developed for Stephen J. Bensman's (1996) "The Structure of the Library Market for Scientific Journals: The Case of Chemistry." The primary component of this set was faculty survey data collected by the Louisiana State University (LSU) Libraries for its 1993 Serials Redesign Pilot Project. The LSU survey asked faculty in the Chemistry Department to name those titles necessary to support curriculum and research, and to indicate whether each title was needed on subscription or if access through a subsidized, unmediated document delivery service would suffice (Hamaker 1994). The second dataset was provided by Tina E. Chrzastowski of the University of Illinois' Chemistry Library. Chrzastowski had collected library use data for a study of chemistry journals she conducted at Illinois. She defined use as the number of times an item was reshelved or circulated. The two datasets were combined using only those titles from the Illinois use study that were also included in the LSU data. Estimates of revenue generated by the titles were then added to allow for the exploration of the relationship between the allocation of resources on a national level to chemistry titles and these three measures of value.

Underlying this study of chemistry journals are the findings of recent research conducted by Bensman and Wilder. The Bensman/Wilder analysis, "Scientific/Technical Serials Holdings Optimization in an Inefficient Market: A LSU Serials Redesign Project Exercise" (July 1998), establishes that throughout each of the ST journal literatures, faculty value highly a relatively few titles, most of which are U.S. association publications. They also establish that a relatively few titles

account for a substantial portion of the cost of subscribing to these literatures. Most of these titles are commercial publications.

Bensman and Wilder use three measures of value in their analysis of ST literature: faculty ratings, SCI citation counts, and use. One of the surprising results of their analysis is that, once appropriate subject groupings have been established, each of these measures of journal value produce virtually equivalent results in terms of journal rankings. In particular, equivalency among these value measures is evidence that researchers in each ST discipline *operate within a similar system*. This system is marked by broad consensus on what is important research, which academic programs tend to produce it, and which journals publish it. This consensus is so pervasive that the same journals rise to the top regardless of which of the three value measures one uses. Given that the basic relationships between value, cost, and publisher type were found to be identical throughout the ST disciplines, the results of the present study of chemistry journals can be said to be illustrative of general patterns in other ST journal literatures.

Measuring Revenue

There is no way of knowing with certainty the amount of subscription revenue a journal generates, but a reasonable estimate can be obtained by multiplying its price by the number of libraries holding it as reflected in the OCLC database. This approach misses subscriptions held by individuals or by institutions that do not place their holdings in OCLC, and it may overestimate the number of subscriptions to titles that have been canceled by libraries but are still listed in the OCLC holdings statement.

Nonetheless, even publishers with substantial individual membership income rely primarily on library subscriptions for their revenue. For instance, Lorrin Garson (1997) of the American Chemical Society (ACS) recently stated that 90% of ACS' subscription revenue comes from institutions. Given that an overwhelming majority of journal revenue stems

TABLE 1: REVENUE ESTIMATES WITH FACULTY SCORE AND TOTAL CITATION*

	Number of Titles	%	Estimated Revenue	%	LSU Faculty Score	%	Total Citation	%
U.S. Association	29	19%	$13,165,270	18%	5,502	40%	872,141	45%
U.S. Commercial	38	25%	$11,250,297	16%	2,038	15%	248,589	13%
Foreign Association	5	3%	$5,355,872	7%	501	4%	87,257	5%
Foreign Commercial	81	53%	$42,522,015	59%	5,862	42%	727,026	38%
Combined Commercial	119	78%	$53,772,312	74%	7,900	57%	975,615	50%
Total	153	100%	$72,293,454	100%	13,903	100%	1,935,013	100%

*Figures in table are rounded.

TABLE 2: REVENUE ESTIMATES WITH ILLINOIS USE*

	Number of Titles	%	Estimated Revenue	%	Illinois Library Use	%
U.S. Association	25	21%	$12,798,017	20%	36,004	51%
U.S. Commercial	27	23%	$9,776,615	15%	4,724	7%
Foreign Association	5	4%	$5,355,872	8%	4,700	7%
Foreign Commercial	63	53%	$36,728,964	57%	24,644	35%
Combined Commercial	90	75%	$46,505,579	72%	29,368	42%
Total	120	100%	$64,659,468	100%	70,072	100%

*Figures in table are rounded.

from sales to libraries, and that a large number of U.S. academic libraries participate in OCLC, counting OCLC holdings is sure to capture a substantial portion of both subscriptions and revenue from U.S. academic libraries.

Publisher Types

Bensman and Wilder separated the journal titles into four publisher types: U.S. commercial, U.S. association, foreign commercial, and foreign association. Both the LSU and Illinois datasets under-represent commercial titles and over-represent U.S. association titles in respect to the universe of published research in chemistry. Many commercial titles were excluded from the sets either because they were not selected by LSU faculty or because they are not indexed in the print version of the *Science Citation Index* (SCI). Both cases are an indication of low value to academic users.

This under-representation of commercial titles may result in an understatement of the actual value of the association titles.

TABLE 3: REVENUE LEVERAGE*

	LSU Faculty Score	Total Citation	Illinois Library Use
U.S. Association	2.17	2.47	2.60
U.S. Commercial	0.94	0.83	0.45
Foreign Association	0.49	0.61	0.81
Foreign Commercial	0.72	0.64	0.62
Combined Commercial	0.76	0.68	0.58

*Figures in table are rounded.

TABLE 4: TITLE LEVERAGE*

	LSU Faculty Score	Total Citation	Illinois Library Use
U.S. Association	2.09	2.38	2.47
U.S. Commercial	0.59	0.52	0.30
Foreign Association	1.10	1.38	1.61
Foreign Commercial	0.80	0.71	0.67
Combined Commercial	0.73	0.65	0.56

*Figures in table are rounded.

Results

Revenue Skew

Within each publisher type, a small number of titles accounts for a significant proportion of the revenue. A look at the top five revenue-generating titles in each category, however, reveals wide variation. Of the 29 chemistry titles from U.S. associations, the top five journals are 17% of that set's titles, and 51% of the total revenue. For U.S. commercials, the top five are 13% of the 38 titles, and 38% of revenue. For foreign commercials, the top five of the 81 journals are only 6% of the titles, but 33% of revenue.[1] This concentration of revenue in the foreign commercial set is particularly noteworthy, indicating that a very small core of foreign commercial titles subsidizes a long list of lower revenue titles in this set.

Relationship of Value to Revenue and Titles

Table 1 presents the revenue and value measure data (faculty ratings and SCI citation counts) for chemistry from the LSU data set. U.S. association publishers produce value in excess of the revenue they receive: they account for 19% of titles and 18% of revenue, but 40% of faculty ratings and 45% of total citations. Commercial publications, on the other hand, receive more revenue than the value they produce: they account for 78% of titles and 74% of total revenue, but only 57% of faculty ratings and 50% of total citations.

The Illinois dataset on library use produces similar results, with disproportionately high value among the U.S. association publishers, and disproportionately low value among commercial publishers (Table 2).

One might conclude from these data that commercial publications supply over half of faculty value as reflected in faculty ratings (57%). However, this conclusion does not account for the much larger number of commercial titles present in both data sets. To correct for this imbalance, Bensman/Wilder created a concept called leverage, a ratio that normalizes the values. In the present analysis, two types of leverage are considered: revenue and title leverage.

Revenue leverage expresses the value of journals in relation to the revenue they generate, and is calculated by dividing the percentage of each value measure by the corresponding percent of total revenue (Table 3). For example, the percentage of faculty ratings for U.S. association titles (40%) is divided by the percentage of total revenue for those same titles (18%), resulting in a revenue leverage of 2.17 (variations due to rounding). Using the revenue leverage scores in Table 3, one concludes that U.S. association journals have 2.9 times the value of commercial publications (U.S. and foreign combined) as measured by faculty ratings (2.17 divided by .76), 3.6 times the value as measured by total citations

(2.47 divided by .68), and 4.5 times the value as measured by library use (2.60 divided by .58).

Title leverage expresses value obtained per title, and is calculated by dividing the percentage of each value measure by the corresponding percent of total titles for each publisher type (Table 4).[2] Comparing title leverage as for revenue leverage above, one concludes that U.S. association journals have 2.9 times the value as measured by faculty ratings, 3.7 times the value as measured by total citations, and 4.4 times the value as measured by library use. The revenue and title leverage measures reveal a more accurate picture of the relationship between publisher types: commercial publications manage to contribute over half of total value as measured by faculty ratings only because there are so many more of them.

Revenue per Title

For the set of chemistry titles examined, there is no statistically significant difference between the average revenue per title generated by commercial publishers and that generated by U.S. association publishers from U.S. academic subscribers. How can this be, given the unusually high cost of commercial publications? One explanation lies in the concept of "first copy costs," expenses attributable to the preparation of a journal for printing, including peer review, technical editing, and marketing, for example.

While estimates of first copy costs vary from 60-80+%,[3] first copy costs are an important consideration for all publishers. When first copy costs must be covered over a smaller subscription base, a higher price is required. On average, the commercial publications in the chemistry dataset have only half of the subscription base of association journals as measured by OCLC holdings, but charge about 80% more (Bensman 1996). In other words, the commercial publishers' high prices make up for smaller subscription bases, and their rising prices may be in part a function of cancellations. If so, commercial publishers are caught in the unenviable position of charging higher prices for products of lower value to a declining subscriber base.

Conclusion

Whatever the components of commercial ST journal pricing, the value to academic scientists is small relative to the revenue they receive. Whereas commercial journals in chemistry account for 74% of the revenue generated by ST publications, on a per-title basis they contribute only between 22-35% of the value of their U.S. association counterparts. This pattern detailed in chemistry has been demonstrated by Bensman/Wilder to exist in the ST literatures in general.

Addressing the imbalance between value and revenue will require a change of philosophy for academic libraries that currently pursue comprehensiveness in regard to ST journal literatures. It is the nature of progress in ST disciplines to require a high degree of consensus among researchers, and one reflection of this consensus is the relatively small number of ST journals deemed important by researchers themselves. Use of journal literatures within the conscribed sphere of high-value titles is so heavy that subscription is easily the most cost-effective form of access. For titles outside this sphere, use is so infrequent that document delivery from commercial document suppliers is currently much less expensive. This is true for large and small institutions alike, meaning that cooperative collection development in ST journal literatures is not cost-effective.

By placing value at the heart of their ST collection development philosophies, academic libraries can free themselves from the high-cost, low-value commercial titles that currently consume such a large proportion of ST journal budgets. The resulting re-allocation of resources will reverse the present imbalance between value created and revenue received by funding only high-value titles, and relegating lower value titles to more cost-effective on-demand acquisition strategies.

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Endnotes

[1] Foreign association journals are not listed here because only five of them were in the LSU data.

[2] In considering the results presented in Table 4, it should be noted that the high title leverage of foreign association journals is partially due to the necessity of combining the five bibliographically separate sections of the *British Journal of the Chemical Society* into a single entity.

[3] Lorrin Garson, in his presentation at the National Meeting of the American Chemical Society (8 September 1997), "Economics of Scientific Publishing," stated that first copy costs for the ACS are 84% of the journal publishing expenses. John Cox of Carfax Publishing estimated in his paper at the 17th annual Charleston Conference (November 1997) that first copy costs of scholarly journals range from 60-70%.

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At the Speed of Thought:[1] Pursuing Non-Commercial Alternatives to Scholarly Communication

by Mike Sosteric, Assistant Professor, Centre for Global and Social Analysis, Athabasca University, and Director, International Consortium for Alternative Academic Publication (ICAAP)

Scholars, information specialists, and academic libraries have warned of a crisis in scholarly communication for years (Sosteric 1996). For a time, it was hoped that electronic publication would bring some much needed relief by reducing the cost of distribution of the primary journal literature. However, despite hopeful statements in the early years, it now appears increasingly unlikely that electronic publication will bring relief. Some commercial publishers, rather than seeing electronic publishing as an opportunity to reduce costs and bring needed relief to the academic libraries that they *serve*, have chosen to exploit the opportunities for increasing profit presented by the new technologies. From our 1998 perspective, the 1996 vision of a future communication system where scholarly skywriting is conducted in a low-cost, collectivist manner by the scholars themselves now seems largely a hopeless fantasy.

A recent statement issued by The International Coalition of Library Consortia (ICOLC, *Statement*) confirms our worst fears. Using their growing monopoly position and control over the scholarly communication system, commercial publishing houses are forcing libraries to purchase *both* paper and electronic versions of their journals at rates that are already higher than the standard print cost and at rates that the ICOLC fears will eventually add as much as 40% or more to the cost of scholarly material in journals. This is certainly not the dream of independent scholarly publishing; it is the nightmare of unregulated monopoly control.

In a press release introducing the statement, the ICOLC notes:

> *The explosion in electronic licensing, the wide variance in publisher practices, rapidly escalating prices, and a concern about the reduction in the number of independent scholarly information providers all served as the impetus for the statement. The Statement calls for developing multiple pricing models, separating charges for electronic licenses from those of paper subscriptions, and lowering the cost for the electronic information below that of print subscriptions. ICOLC expresses its concern over the growing practice of publishers that levy initial surcharges on electronic information, which is compounded by significant multi-year inflation surcharges and prohibitions against libraries canceling print versions of journal titles. As a result, while libraries may receive access to a larger array of titles by paying the 'print price plus electronic subscription cost plus inflation,' the total base price for electronic access over the print subscription could increase by 40% or more within as little as three or four years.*

A similar attempt to consolidate the strength of libraries and perhaps win support from the scholarly community took place in Europe in late 1997. A coalition of 15 Dutch scientific research libraries came together to express their concerns over an announcement by Reed Elsevier of its intent to merge with Wolters Kluwer (both major scientific publishers) and to pursue "a strategy of increasing its focus on 'must-have' information." Seeing the anti-competitive nature of the proposed merger, the Dutch librarians adopted a set of principles aimed at bolstering their position in negotiations with publishers and reducing the possible impact of skyrocketing electronic journal prices.[2]

Unfortunately, in the long-run, libraries are virtually powerless *by themselves* to offset the practices of commercial publishing houses. When it comes right down to it, an academic library simply must have the key journal titles. They serve an academic market, after all, and it is this market that largely determines which journals should be made available. If the academic market continues to demand the high-prestige titles, and if we, the faculty authors, continue to submit our work to these journals, there is little libraries will be able to do but cope with our needs and purchase the high price journals.

Barriers to Independent Scholarly Publishing

So what is to be done? At one point, scholars like Steve Harnad, Andrew Odylzko, and Bernard Hibbits made calls for a new future of independent scholarly publication outside of the commercial mainstream. In the context of the crises in the scholarly communication system, proselytizing a future for independent publication was a laudable project. However, the vision of independent communication has not been realized primarily because scholars have been reluctant to take up the call to independent publication. Despite the powerful potential of information technologies to wrest control of the scholarly communication system from the big commercial publishing houses, relatively few individual scholars have initiated journal projects. It is perhaps this failure on the part of the academic community to move quickly to independent publication that has encouraged commercial houses to grow bolder in their demands.

But why the reluctance? What are the barriers that have slowed the revolution in scholarly publication within the academic environment? Probably one of the most significant barriers to independent scholarly publication is simply the amount of work involved. There can be no doubt that editing journals takes a lot of work. And it takes even more work when you add typesetting and production duties to the job requirements. Add to

this the necessity of developing a high degree of computer literacy and you have a daunting barrier to participation in the electronic revolution.

A second barrier, closely related to the first, is that editorial duties are not as highly regarded as publishing scholarly articles or books when it comes to tenure and advancement decisions. As a result, even those individuals who may be willing to take on some of the work of publishing a journal in their field may be reluctant to do so because of the time it takes away from other, more important, activities. In a decision between putting time into an activity that moves you towards tenure and editing an electronic journal, the current reward structure virtually guarantees that scholars will pass up opportunities to start publication projects.

Third, access to the system of scholarly communication is largely closed to all but the most established scholars. Legitimate restrictions on access, which follow an almost guild-like structure, ensure that quality is maintained. However, there is a significant contradiction and irony in the way control is maintained. Mechanisms for apprenticing scholars in even the old technologies seem undefined and there are no efforts to develop a craft structure for electronic publication. Because of this guild-like structure, and because of the relatively inadequate uptake mechanisms, most up and coming scholars would not have sufficient confidence to cross the line into the scholarly communication system without proper guidance and encouragement (and we would probably be safe in assuming that most new scholars would be discouraged from initiating journal projects). This is, of course, the rub, since it is young scholars who are most likely to take the risks associated with initiating an electronic journal project. Perhaps it is this weakness in the current system of quality control that is preventing a more rapid adoption of new technologies by scholars. And while some may argue that it is necessary to move slowly, failure to utilize initiative at any level supports commercial penetration and control almost by default.

Fourth, independent scholarly publication has been largely seen as an anomaly and there are still questions about the quality of independent publication on the Net. These concerns seem largely undeserved. Publications like the *Electronic Journal of Sociology* (*EJS*) <http://www.sociology.org/> get tens of thousands of hits a month, draw papers from all levels of the academy (including established authors), and have achieved international recognition. And the *EJS* is not alone in this. So the basic problem seems to be convincing "the establishment" of the acceptability of alternative publication. The general scholarly world seems to have already reached its own conclusions.

Fifth, there hasn't been a deep sense of urgency to spur scholars into action—up until now. At this point, however, it is hard to deny that serious and damaging changes are occurring in the academy. Higher education, once at least marginally dedicated to liberal ideals, is slowly and inexorably being turned into a venue for profit generation. The long-term implications have been explored elsewhere,[3] but it is clear that not only access, but also our own livelihoods are being threatened.

Sixth, while individual projects have abounded, there have been few attempts to develop the level of organization required to create a broad, multi-disciplinary coalition of educators, researchers, and administrators dedicated to revolutionizing the scholarly communication system. Such an organization is sorely required. Not only because a coalition of journal editors and institutions will raise the standards and acceptability of "craft based" journal publication, but also because such a coalition will be able to exert considerable market power in the highly monopolistic world of academic journals.

International Consortium for Alternative Academic Publication

This is a call for participation in a broad-based initiative dedicated to the development of an international alternative scholarly communication system outside of the commercial mainstream. Founded in Canada and housed at Athabasca University, it is named the International Consortium for Alternative Academic Publication <http://www.icaap.org/>. The Consortium's mission is to reduce the barriers to independent scholarly publication by bringing together scholars and institutions from all countries and all disciplines who are interested in bringing economic health back to the scholarly communication system. ICAAP resolves to work towards overcoming blocks that have prevented a shift away from commercial dependence and will pursue the following agenda:

Providing Editorial Assistance

In order to increase the chance that individual scholars will publish their own journals, ICAAP will devote the bulk of its revenue to hosting journals and providing final production assistance (HTML markup, copy-editing, etc.). ICAAP will also develop online resources and tutorials in order to help facilitate the development of alternative outlets for scholarly work.

Enhancing the Prestige of Editorial Work

In order to encourage scholars to develop their own journal projects, editorial work will have to be sufficiently rewarded. We believe it is possible to raise the status of editorial work in the academy simply by exposing the difficulties, challenges, rewards, and

contributions that editors make to the progress of science. ICAAP will tirelessly proselytize this cause to the scholarly world.

Enhancing the Prestige of Independent Electronic Publication

There should be no reason that commercial publishers are seen as any more prestigious than independent publication efforts. After all, it is we who provide the critical editorial and review work. Commercial houses simply provide production services and editorial standards. To remedy this imbalance, ICAAP will develop cross-disciplinary publication standards. In developing these standards, ICAAP will focus on developing high-quality publication without the expensive frills that commercial publications most often use to justify higher prices.

Providing a Route For Apprenticing Young Scholars in the Craft of Scholarly Communication

Recognizing that part of the problem is a lack of appropriate training, ICAAP will, through its official organ *The Craft* <http://www.icaap.org/journals/hosted/TheCraft/>, provide a venue for apprenticing young scholars in the art and science of scholarly communication. It is hoped that eventually these scholars will go on to initiate their own independent journal projects outside of the commercial mainstream.

Providing Technical Expertise and Standards to Move Independent Efforts Towards Greater Standardization

It is imperative, if independent scholarly communication is to advance beyond its current uncoordinated state, that technical standards be developed to ensure efforts are not duplicated or wasted and that the cost to the system is not raised through this duplication of effort. ICAAP proposes to develop, in consultation with stakeholders, technical standards for the production and distribution of scholarly information. One such effort already underway is our web indexing robot <http://www.icaap.org/JournalsIndex/>. This robot is unique in the realm of web robots not only because it targets only scholarly resources (thus eliminating the problems associated with the many less discerning robots on the Web), but also because it is capable of structuring the indexing of journals on familiar search fields.

ICAAP already has affiliations in Australia, Canada, Denmark, Mexico, and Russia. We are currently seeking to expand our board of directors with interested scholars from all disciplines, and we are seeking affiliations with stakeholder organizations with an international scope. Discussions to explore an appropriate relationship with SPARC are currently underway. We at ICAAP hope that you and your organization will join us in our mission to revolutionize the scholarly communication system.

~ ~ ~

Endnotes

[1] The author would like to acknowledge the work of Steve Harnad as inspiration for the title of this article and the ICAAP catch phrase, *At the Speed of Thought*, from his work, "Post-Gutenberg Galaxy: The Fourth Revolution in the Means of Production of Knowledge," 1991, <ftp://ftp.princeton.edu/pub/harnad/Harnad/HTML/harnad91.postgutenberg.html>.

[2] These guidelines state that libraries that subscribe to a print version of a journal should not have to pay more than an additional 7.5% for electronic access to that same journal, and that libraries should not pay more than 80% of the print rate to subscribe exclusively to the electronic version. "We've been talking about a 'journal crisis' for years," says one of the Dutch librarians. "It looks like it's finally arrived. We're fed up." Quoted in the International Federation of Library Associations mailing list <IFLA-L@INFOSERV.NLC-BNC.CA> from Terry Kuny <Terry.Kuny@xist.com>, in the article "Libraries Join Forces on Journal Prices" (*Science* 278.5343 [28 Nov 1997]: 1558).

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ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036.
202-296-2296 FAX 202-872-0884
<http://www.arl.org/>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Co-editor: Lee Anne George, Program Planning Officer
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription; Nonmembers—$50 per year.

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ARL

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The Digital Millennium Copyright Act

Following years of oftentimes contentious debate, on October 28 the President signed into law extremely complex legislation that updates selected aspects of U.S. copyright law to address the digital environment. The changes to U.S. copyright law included in the Digital Millennium Copyright Act (DMCA), PL 105-304, are significant and place new requirements on libraries and educational institutions. As a consequence, there is a need for broad awareness, indeed, deep understanding, about the major points of this law. In addition, implementation of the DMCA will require active engagement within all educational institutions and libraries so that they may comply with the new requirements as well as take advantage of the opportunities presented in the law.

To contribute to our communities' understanding of the new law, ARL and its partners in the Shared Legal Capability are developing several papers that review and evaluate pertinent titles and/or provisions in the DMCA. Many of these pieces include next steps and recommended actions for libraries and educational institutions to take in order to benefit from selected aspects of the law. This issue of the ARL newsletter includes excerpts from two of these papers. The first is from an analysis of DMCA that highlights time-sensitive actions that libraries and educational institutions must address to take advantage of a new exemption for online service providers. The second report is excerpted from a paper on distance education. Both papers were prepared by Arnold Lutzker, Lutzker & Lutzker, legal representative for the Shared Legal Capability. Additional resources on other aspects of the DMCA, including preservation and fair use and access issues, are forthcoming.

Highlights of New Copyright Provision Establishing Limitation of Liability for Online Service Providers

Executive Summary

One of the principal provisions of the Digital Millennium Copyright Act ("DMCA") is a limitation on the potential money damages that Online Service Providers ("OSPs"), including libraries and educational institutions, could face when they function like a common carrier, allowing online users access to copyrighted material placed there by someone else. Rather than confront huge financial claims if the third party material infringes someone's copyright, OSPs can escape liability provided they comply with these new rules. *Since the statute takes effect immediately, it is urgent that all institutions act promptly to ensure that their systems are in compliance with the terms.* Note that the limitation does not apply to copyrighted material the OSP may place online itself, such as on its home page. Standard copyright rules, including proper clearance and fair use, apply to that material.

The statute defines a "service provider" as an entity that transmits, routes and connects users to online communications or provides online or network services, such as storing digital material, caching, or providing location tools (directories, hyperlinks, etc.). When dealing with copyrighted material available through its network, an OSP must be *passive*. It cannot place material online, modify content, store it longer than necessary or know that it infringes someone else's copyright. Its systems must operate automatically and it cannot choose recipients of transmissions. Finally, it must not directly profit from an infringement.

The statute requires that in order for an OSP to qualify, it must implement several novel requirements immediately. Institutions would be well advised to turn these matters over to an established committee that manages copyright policies, or to create a new group for that purpose. In light of the fact that the statute calls for taking prompt action and making informed decisions, such a body could find itself involved in important policy questions. Among the things an institution needs to do right away to qualify for the limitation are the following:

- *Designate an agent* to receive statutory notices from copyright owners about infringements and to send statutory notices to affected subscribers.
- *Advise the Copyright Office* of the agent's name and address and post that information on the OSP's website.
- *Develop and post a policy* for termination of repeat offenders and provide network users with information about copyright laws.
- *Comply with "take down" and "put back" notice requirements.*
- Ensure that the system *accommodates industry-standard technical measures* used by owners to protect their works from unlawful access and copyright infringement.

A special exception has been created for public and nonprofit institutions of higher education, which allows them to qualify for the limitation even when the offending user is a member of the faculty or a research graduate student. The law also gives immunity from third party user claims, provided there is a good faith compliance with the statutory rules. It should also be borne in mind that it is *not necessary* to actively monitor material on the Internet. *The limitation requires an OSP to take action when it has "actual knowledge" of an infringement (by facts brought to its attention or by notice from the copyright owner), but it does not impose the burden on the OSP to monitor or discover infringing behavior.*

In all, the limitation on liability gives library and educational service providers a critical legal exemption at a time when their exposure to online copyright infringement is growing, not only because of the increased volume of material on the Internet, but also because of several adverse court rulings. To make full and effective use of the limitation, each institution should take the time now to carefully review the details of the Act set forth in this memo.

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See the Library of Congress OSP registration site <http://lcweb.loc.gov/copyright/onlinesp/> for the OSP Interim Regulations.

STUDY ON DISTANCE EDUCATION AND DIGITAL TECHNOLOGIES

Although not originally part of the WIPO Implementation Act debate, distance education became a topic of the negotiations because libraries and educational interests raised it. The point was that it would be inappropriate to expand legal protection for commercial owners of digital works without remedying some of the legitimate legal concerns of librarians and educators who use copyrighted works and technologies in education. With a commitment from the Chairman and Ranking Minority Members of the Senate Judiciary Committee, Senators Orin Hatch (R-Ut.) and Patrick Leahy (D-Vt.), the Senate included a Copyright Office study of distance education in the bill. The study remained part of the Digital Millennium Copyright Act (DMCA) as finally enacted.

The provision requires the Register of Copyrights not later than six (6) months of passage of DMCA (April 28, 1999) to provide Congress with its recommendations on how to promote distance education through digital technologies, including interactive digital networks, while maintaining an appropriate balance between the rights of copyright owners and the needs of users of copyrighted works.

The study requires the Register to consult with representatives of copyright owners, nonprofit educational institutions, libraries and archives and to focus on the following factors:

- The need for an exemption from exclusive rights of copyright owners for distance education through digital networks.
- The categories of works to be included in any exemption. The extent of appropriate quantitative limitations on the portions of works that may be used under any distance education exemption.
- The parties who should be entitled to the benefits of any exemption.
- The parties who should be eligible to receive distance education materials under the exemption.
- Whether and what types of technological measures can or should be employed to safeguard against unauthorized access to and use or retention of copyrighted materials as a condition of eligibility.
- The extent to which the availability of licenses should be considered.
- Other factors that the Register deems appropriate.

On November 16, 1998 the Copyright Office released a preliminary notice soliciting identification of interested parties and a statement of their concerns by December 7, 1998 (see <http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=1998_register&docid=fr16no98-111/>). The Copyright Office will also invite written submissions over the next few months, and plans to meet with interested parties and hold public meetings.

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The papers excerpted above are available in their complete form on the ARL website, as are other reports about the DMCA and related copyright issues <http://www.arl.org/info/frn/copy/dmca.html>. ARL is also preparing a print compilation of DMCA resources.

Coalition for Networked Information

Clifford Lynch, Executive Director

Access Management for Networked Information Resources

Introduction

Over the past year the Coalition for Networked Information (CNI) has been leading a broad-based exploration of access management and authentication issues that are emerging as institutions share resources and license access to published materials through the Web. Scores of institutions and content providers participated in the discussion and contributed to the development of a lengthy white paper that is now being cast into final form; both the draft from the spring of 1998 and, when completed, the final version, can be found at CNI's website <http://www.cni.org/>. The interested reader is urged to consult this white paper for a much more in-depth discussion of the issues summarized here.

This article is intended to briefly describe the crux of the access management problem and the two major architectural approaches that are now coming into use to address it. It will also devote considerable emphasis to important policy issues that emerge as part of the consideration of approaches to access management; these issues are real, immanent, and potentially controversial. Research libraries have both an opportunity and an obligation to provide their patron communities with leadership in understanding the issues, and to work with these communities to formulate appropriate policies proactively and thoughtfully, rather than in response to a crisis or scandal. Many universities are now implementing institutional authentication and access management systems to support specific application and security requirements; typically this work is being overseen by the institution's information technologists and it is often motivated by policy imperatives and priorities that are very different from those of the library. Because authentication and access management represents a common infrastructure that will ultimately need to serve many purposes, it is essential that libraries and information technology groups establish a dialog now to ensure that the systems which are ultimately deployed honor the complete set of campus community requirements.

This article does not discuss the technical details involved in authentication and access management—they are complex and the state of commercially available technology is continually changing. Suffice it to say that, as of this writing (November 1998), there does not seem to be any simple, inexpensive, ready-to-deploy comprehensive solution for authentication and access management; while there are many promising components available, management complexity, user training and acceptance, system integration, and cost are still major issues. Organizational readiness within the content provider community is also a barrier to the use of advanced technology-based approaches; content site operators are no more able than libraries to obtain commercial turn-key solutions. But as libraries offer a growing portfolio of network-based information resources, they face immediate and pragmatic needs for access management. In developing strategies, it is important to recognize that technical choices about access management have policy implications.

The Access Management Problem Defined

A library negotiates a license agreement on behalf of its patron community—for example, the faculty, staff, and students of a university. This license agreement gives members of the community the right to use some network-based resource—perhaps a commercially offered electronic encyclopedia or scholarly journal at a publisher website, or a specialized research database at another university that is part of a resource-sharing agreement. Users connect to the site using web browsers running on their personal workstations or on public workstations. As the site hosting the licensed resource processes these requests for web pages, it must determine whether the requesting user is in fact a member of the appropriate user community. If so, he or she is given access; if not, access is refused.

Obviously, this basic scenario can be elaborated upon—for example, there is a need for finer-grained systems that can be used to allow only registrants in a specific multi-institutional course access to electronic reserve materials provided by the library at one of the institutions. These more elaborate situations raise additional problems both in terms of scale and system design and are useful to have in mind to understand the extent of the requirements; however, we will concentrate on the basic scenario here.

Access management needs to be routine and easy to implement; once a contract is signed, lengthy technical negotiations between institution and content supplier should not be necessary before users can have access. In a world of networked information resources, access management needs to be a basic part of the infrastructure, and must not become a barrier to institutional decisions to change or add resource providers.

While it may be a complex administrative question to determine the membership of the patron community in a world of extension students, affiliated medical professionals, visiting scholars, and others who may

Continued

blur the boundaries, libraries have a great deal of experience in devising these policies. The problem here is a technical one between two computers: how does the resource host machine actually determine that the user at the requesting workstation is really a member of the relevant community? In other words, given a policy for determining community membership, how is this policy implemented technically? In the physical world of circulating materials, the "technical" problem is dealt with through the presentation of a library card indicating that the holder is indeed an authorized borrower; this library card is issued upon the presentation of policy-specified documents that identify the user and prove that he or she meets the policy criteria for authorized community membership (a faculty ID, for example, plus a picture ID).

Some Approaches That Don't Work Well

Historically, many computer systems employed user IDs and passwords. When a user ID was first defined, it would have certain rights and privileges associated with it. The user would then supply a password upon demand to demonstrate his or her rights to use a given ID. Leaving aside technical problems associated with the use of passwords on an insecure network and the possible technical remedies, there is a more basic architectural issue. We are in a world where users may routinely want access to many different network resources controlled by many different organizations, such as publishers; but with the ability to follow links on the Web it may not even be clear to the user which publisher owns what resource. Users will not be able to remember and manage a large number of different user IDs and passwords issued by different publishers; further, each publisher will need some cumbersome procedure to validate the user as a community member prior to issuing a user ID and initial password (for example, involving mediation by local library staff). This does not scale up in a practical way to a world filled with electronic information resources.

The library might issue the user a single ID and password for all licensed external network resources, and then transmit lists of these IDs and passwords to each content supplier so that the supplier can use the list to validate users. However, there are architectural problems here, as well: a very large number of publishers would need to be notified every time the list of user IDs and passwords changes, with inevitable timeliness and synchronization problems. Also, each publisher takes on an enormous responsibility for protecting the security of the ID/password list; a security breach at any publisher will mean a security breach at every publisher doing business with the library for networked resource access, an unacceptable liability. Here the networked information scale-up means that too many independent parties must rely on each other to maintain security, and that the cost of accurately maintaining a synchronized common-access management database will be very high (to say nothing of the standards that would need to be put in place to make such a shared database a reality).

As a stopgap measure, many institutions are currently using electronic "place"—the user's source IP network address—as a substitute for other methods of demonstrating proof of community membership. If the user's connection request came from a network that belonged to the university, it is assumed to be from a community member. Network ownership does not change too frequently, so maintaining a list of valid network numbers and making this available to publishers is a tractable administrative burden. Further, since the list of network numbers, unlike IDs and passwords, doesn't need to be kept secret, there is little interdependence. This approach works well and, indeed, has the virtues of simplicity and transparency to the user, as long as all users come to the resource providers through the campus or library network. However, in an era when many institutions are discontinuing dial-up modem pools in favor of commercial Internet service providers, and when new access technologies to the home, such as cable television modems for Internet access, are beginning to deploy, a great deal of legitimate user access now takes place from sources other than the campus or library network. With growing needs to support distance learners, part-time students who may do academic work from their place of business, and people who want to exploit the "anytime, anywhere" promise of networked information resources from their homes, limiting access by source IP network address disenfranchises more users every day. For most universities, for example, it is clearly no longer acceptable to tell community members they can only access networked information resources from on-campus workstations.

The Two Emerging Architectures for Access Management

Two general approaches are emerging to address the access management problem. The first is the use of proxies. Here, an institution develops an internal authentication system and uses it to validate user access to a special machine on the institutional network, called a proxy. Once a user is validated, he or she can ask the proxy to contact an external resource; in some variations, the proxy mediates the user's entire interaction with the external resource, while in other

(perhaps slightly less secure and user-transparent) variations the proxy drops out of the interaction after making the introduction. From the resource operator's point of view, it is only necessary to know that the institution's proxy server can be trusted to pre-validate all users before contacting the external resource host. Proxies have a number of advantages: authentication is an internal matter to the institution and external service providers need not be concerned with the details of how this is accomplished; at least in theory, the institution has complete flexibility in deciding what resources a user can have access to through the proxy and when; and the proxy can act as a central control point for the institution in access management. On the negative side, the proxy is a high-impact central point of vulnerability for outages or capacity problems (though, of course, it's possible to have multiple proxy machines), and configuration management in the proxy can become extremely complex and labor-intensive, particularly if not every valid proxy user has access to all resources. Further, proxies do not eliminate the need for an authentication system; they only isolate its scope to the proxy and the members of the institutional community.

Patron privacy has been such an important value to libraries that they have, by and large, used a dual technical/legal strategy to provide their patrons with the strongest possible protection.

The other approach is based on credentials. The basic idea here is that the institution issues each user the electronic analog of a community ID card. The user, or the user's browser, presents these credentials upon demand to any resource provider that requests them; the resource provider can then, through a fast electronic transaction, validate the credentials with the issuing institution. The validation process shares with proxies the vulnerability to outages or capacity problems on the part of institutional systems that verify credentials, though these vulnerabilities are more circumscribed. A compromise of the credential-verification system may be more serious than compromise of a proxy: proxy compromise usually means that unauthorized users get access to resources for the period during which the proxy is compromised, while a compromise in the credentialing system may well mean that new credentials need to be issued to the entire authorized user community. The major practical difficulties with the credentials-based approaches, however, involve technical problems, standards, cost, and software integration.

The simplest credentials-based approach would be to have the institution just issue the user a user ID and password for external resources, and to have external resource providers validate the ID/password pair with the institution (as opposed to having the institution distribute lists, as discussed earlier). This reduces, but doesn't eliminate, the interdependence among external resource providers in the maintenance of security; further, standards don't exist for such a validation process and no off-the-shelf software supports it. The industry is moving towards a technology based on public key cryptographic certificates (X.509) in off-the-shelf software, and, at least in theory, this should work well for personal machines (but not for shared or public workstations, which would have to be handled some other way, such as IP source address checking, at least until a much more complex hardware-based infrastructure becomes widely deployed). X.509 removes the interdependent security issue because credentials are computed for each use from information that is held only by the user and never directly transferred to the content provider.

The problems with this approach include integration with browsers, the mechanics of issuing and distributing these electronic cryptographic certificates to users, the cost and complexity of acquiring and operating the infrastructure for managing and validating public key certificates, and government regulation of the export and use of cryptography in various countries, which causes problems in an increasingly international world of scholarly resources. All of these problems with cryptographic certificates are slowly but steadily getting better (except, perhaps, for the government regulation issues), but, at least today, implementation of such an approach is an enormous challenge. Finally, it is important to note that X.509 was really designed to support applications such as electronic commerce, and there are some significant problems in relation to the policy problems discussed in the next section.

Policy Issues in Authentication and Access Management

The development of any access management strategy raises policy issues in areas such as privacy, accountability, and the collection of management data. It is

Continued

important to recognize that libraries must decide whether to address these issues through legal means (that is, by negotiating contractual obligations on the resource supplier as part of the license agreement), through technical means (for example, by making it impossible to collect personal data), or by a combination of the two.

Library experience in other contexts offers some insights. For example, libraries have aggressively championed and defended the privacy of their patrons. They have done this through both legal means—by developing privacy policies and by requiring a legal subpoena as a condition for divulging records—and also by technical means by not keeping historical circulation data on an individual basis, which then limits the amount of information that they can be compelled to disclose under any circumstances. Patron privacy has been such an important value to libraries that they have, by and large, used a dual technical/legal strategy to provide their patrons with the strongest possible protection.

In the electronic environment, it is easy for a publisher to track the use of content in great detail—what material is being viewed, for how long, and how often. Depending on how the access management system is structured, particularly when credential-based approaches (and specifically, routine implementations of X.509 certificates) are employed, the publisher may be able to correlate this usage information to a specific individual by name, to a long-term "pseudonymous" identity that the publisher can link to an institution but not to an actual individual within that institution's community, or simply to a transient and anonymous member of the institution's user community. Clearly, the license contract between institution and publisher can speak to the collection, retention, use, and disclosure of such usage data on a policy basis, but libraries and patrons may find it desirable to limit the ability of the publisher to collect information by the design of the access management system on a technical basis, as well.

One important point needs to be made about user privacy that underscores the need for contractual constraints even in conjunction with an access management system that provides some level of anonymity: often users will make their actual identities known to content providers for other reasons, independent of the access management system, such as to take advantage of email-based current awareness services or personalization options in a user interface. The access management system is not the only way in which privacy can be compromised, or bargained away for increased function or convenience.

A license agreement represents a commitment on the part of the licensee institution to honor the terms of the license, and to educate members of its community about their obligations under the license. The publisher and library share a need for some level of accountability by community members: if a single user accesses publisher content hundreds of times a day from three continents, it's likely that something is wrong; perhaps that user doesn't understand his or her obligations, or perhaps credentials have been compromised. There is a need for the publisher and the library, acting together, to be able to investigate such situations effectively, and, if need be, to block access by specific individuals who seem to be violating the terms of a license agreement. But, in order to do this effectively, a publisher needs to be able to at least provide an institution with enough information (such as a pseudonym) to permit the individual in question to be identified; note that this does not necessarily mean that the publisher can directly identify the individual in question, but only that the publisher can provide the institution with enough information to identify the user. The need for accountability contradicts, to some extent, the mandate to design anonymity into an access management system, and argues for a pseudonymous approach. This can be achieved with credential-based approaches (though it is not the standard model for X.509 certificates, for example), but is more difficult with proxy-based architectures.

Finally, there is the issue of management data. Electronic information resources promise libraries much more accurate and detailed data about what content is actually being used and how often—though even at this level libraries may want to make contractual stipulations to protect patron privacy; for instance, it is not clear how many universities would be comfortable having a list of all the articles read by members of their community (with frequency counts) posted on the Web every week. But greater problems arise when libraries want to have these usage statistics, at whatever level of aggregation, demographically faceted—for example, to drive internal cost allocation processes within the library's institution. The simplest solutions are often to pass demographic attributes to the publisher along with identities or pseudonyms and to get the publisher to do the work of generating management data for the library—but this path can rapidly compromise the privacy of pseudonymous users by making them more identifiable and, if actual identities are used, it makes the privacy problem even more acute by raising the

stakes on the amount of information disclosed. In discussing this issue as part of the CNI authentication work, it appears that many libraries, because of the privacy considerations, are backing away from the continuous collection of demographically faceted usage data, recognizing that they can always do specific studies in order to obtain "snapshot" information, much as has been done with journal usage historically.

Demographically faceted usage data offers a good illustration of the scaling issues that we face in the move to network-based electronic information. If a library were dealing with just a single publisher, it would be reasonable to have the publisher return detailed (transactional) usage data with pseudonyms to the library. The library could then look up the pseudonyms to obtain demographic data and summarize the transaction data into management information. Here privacy is protected by library policies and does not depend on the publisher, who knows only pseudonyms. But this is intractable with hundreds of publishers, each supplying transaction data at different time intervals and in different formats (and even based on different models of the transactional events being tracked and logged). Without very detailed standards, which don't exist today, and very rigorous adherence to such standards by the publisher community, libraries needing demographically faceted usage data will be forced to export demographic information to each publisher.

Conclusion: Towards Practical Short Term Solutions

Credential-based solutions require substantial work by publishers; at least a few of the larger publishers have a sophisticated understanding of the access management issues and are, I believe, prepared to work with libraries and universities to put credential-based solutions in place. However, many content providers offer only IP source, network-based authentication and have a limited understanding of the broader issues. One of the great advantages of proxy-based approaches is that, from the content provider perspective, they appear to be a simple extension of IP source network authentication: they do not require any additional work by the content provider and all of the complexity of an authentication system is hidden within the institution's proxy servers. This suggests to me that most institutions will be forced to continue to support a proxy-based approach for the foreseeable future, if they are to manage access to a wide range of publishers. Credential-based approaches may be useful in authenticating users to the proxy, and can also be exposed to those content providers that understand and support them where it is useful, but user needs for consistency of mechanism may well mandate that all access be managed by proxy except for specialized inter-institutional resource sharing arrangements (such as electronic reserves).

Finally, it is worth noting that institutional authentication systems are not driven solely by demands to access network-based information resources; they are needed as a means of managing access to institutional resources and services, and, in a time when many networks within higher education institutions are under constant attack, they are also being viewed by some institutions as a means of improving security. Some institutions are now seeking to establish both policy and technical infrastructure that forbids unauthenticated access to the institutional network and the services available on it. To the extent that these local authentication mechanisms are exposed externally and reduce the privacy of library patrons in interacting with external resources, I believe that they require very careful examination and discussion. At many institutions, the focus of the information technology managers is primarily on the management of local resources, while the focus of the library is on access to resources beyond the boundaries of the institution, and it is essential that these two perspectives be balanced in the development of institutional infrastructure and policy.

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CNI's 1998-99 Program Plan

CNI's 1998-99 Program Plan has recently been issued. Specific projects for the year are detailed under the broad themes of:

- Developing Networked Information Content
- Transforming Organizations, Professions, and Individuals
- Building Technology, Standards, and Infrastructure

The full text of the plan is available at: <http://www.cni.org/program/>.

SPARC

Richard K. Johnson, Enterprise Director, Scholarly Publishing and Academic Resources Coalition

Arizona Biologist/Editor Breaks With Publisher to Establish Low-Cost Alternative

Biologist Michael Rosenzweig is abandoning the thriving scholarly journal he founded a dozen years ago because he believes the publisher has made it so expensive that many libraries and colleagues no longer can afford it. He says price increases on his journal, averaging almost 19% annually, have harmed the scientific community, the very group that supplies articles to the journal for free.

With endorsement from SPARC (the Scholarly Publishing & Academic Resource Coalition), the University of Arizona professor is staking a considerable amount of his own money on independently launching a new journal focusing on the conjunction of evolution and ecology. *Evolutionary Ecology Research* (*EER*), the comparatively low-priced alternative to his original project, will begin publication in January.

"I conceived the original journal as a scholarly resource. In addition to its basic science value, its articles help to identify the long-range consequences of environmental change for ecosystems. I wanted that information to be affordable so it would be broadly available," said Rosenzweig, who founded and serves in the University of Arizona's Department of Ecology and Evolutionary Biology in Tucson. "But soon after the project was launched in 1987, our original publisher, Chapman and Hall, was bought by International Thomson Corporation. Then, this year, they sold the journal to Wolters-Kluwer. At every change of hands, the price increased significantly. It has become obvious over the years that the journal's editors and publishers have incompatible goals. We want to disseminate knowledge; they want to maximize profits."

It has become obvious over the years that the journal's editors and publishers have incompatible goals. We want to disseminate knowledge; they want to maximize profits.
–Michael Rosenzweig

Because the skills, prestige, and connections of the editor and editorial board are key to the success of a scientific journal, *EER* is well positioned to compete for readers and manuscripts. Rosenzweig is an acknowledged force in his field and his entire editorial board is taking the plunge with him, having told Wolters-Kluwer they will no longer edit the existing journal. Because of their reputation, *EER* already has attracted an ample pipeline of manuscripts for the first year of publication, with solid potential for more. Moreover, Rosenzweig says his experience starting a successful academic journal and managing it for 12 years will also serve *EER* well.

While scholars commonly pursue commercial ventures, entrepreneurship is the last thing on Rosenzweig's mind. He is publishing *EER* as a resource for essential scientific knowledge, not as a cash cow. Rosenzweig shares the opinion of many researchers and librarians around the world that commercial publishers of scholarly literature in recent years have become too profit-oriented, thus crippling the authors' and editors' hunger to advance knowledge.

The mechanics of publishing *EER* are simple to Rosenzweig: he will outsource the journal's production, just as many large publishers do. But the initial challenge lies in the publication's rapid market acceptance, especially when another journal covering the same subject is already established. After exploring various options for publishing *EER*, Rosenzweig turned to SPARC because its members share his sentiment that the spiraling price of information threatens scientific discovery.

While Rosenzweig cares little about the new journal's profitability, he recognizes it must be financially viable. "I've run the numbers every which way, and I'm confident this will be a going concern," said Rosenzweig. "I'm prepared to lose money for a while—it's the cost of starting a business. But over the longer haul, we've got excellent prospects." Whatever may come, he says he will stick to his promise of keeping the journal's price down by basing it on the actual production costs. *EER* web subscriptions will be offered to libraries in 1999 for just $272—one-third the current subscription price of Wolters-Kluwer's print publication. Moreover, individuals associated with each subscribing institution can purchase personal print subscriptions for $33 in the U.S. and $41 elsewhere—about one-quarter of Wolters-Kluwer's price for individual subscriptions.

As is the case with so many scholarly journals, Rosenzweig nurtured his original project personally in return for minimal compensation by his publishers. He expects to do the same with *EER*, but says his real compensation will be the gratification that important research is being made readily available to his colleagues.

"Scholars rarely publish for profit," said Rosenzweig. "If I'm not motivated by profit, then there's no sense in pricing this journal far above the cost of production. But getting *EER* quickly recognized within the marketplace indeed is essential. Our association with SPARC will go a long way toward making that a reality."

More information on *Evolutionary Ecology Research* is available on the World Wide Web at <http://www.evolutionary-ecology.com/>.

SPARC Notes

SPARC Notes is a new occasional feature of the ARL newsletter that provides a rundown on activities of the Scholarly Publishing and Academic Resources Coalition (SPARC) and its publishing partners.

Europeans Join Effort to Expand Competition in Journal Publishing

European chemists and libraries have joined North American efforts to expand competition, drive down prices, and enhance timeliness in scientific journal publishing. SPARC and the **Royal Society of Chemistry** (RSC), based in the United Kingdom, have agreed to collaborate on a series of new high-quality, peer-reviewed electronic journals that will be offered at far below the prices of competing commercially published journals.

PhysChemComm, the first product of the SPARC-RSC partnership, provides rapid communication of articles in physical chemistry. With a 1999 price tag of $353 (200 Pounds Sterling) for site-wide institutional online access, it competes head-to-head with a commercial title priced at over $8,000. The RSC title is an all-electronic journal providing double refereeing, an esteemed international team of editors, searchable full-text, multi-media presentation features, and web availability.

SPARC also announced it will be represented in the UK and Ireland by the **Standing Conference of National & University Libraries** (SCONUL), which includes 129 leading libraries in its membership, and has established an affiliation with **Denmark's Conference of Directors of Research Libraries**, an organization of 12 major libraries. These alliances are the first expansion of the program beyond North America.

SCHOLARLY PUBLISHING AND ACADEMIC RESOURCES COALITION

ACS Appoints Editor To Head New Organic Letters Journal

The world's largest scientific society, the **American Chemical Society** (ACS), has announced the appointment of **Amos B. Smith, III** as Editor-in-Chief of ***Organic Letters***, a new peer-reviewed chemistry journal slated to begin publication in July 1999. The journal is the first of three to be published by ACS as part of a collaboration with SPARC aimed at developing lower-cost alternatives to high-priced journals and encouraging rapid dissemination of research results. The new journal will be priced at $2,300 per year, about one-quarter the price of its direct competitor.

A leading researcher in synthetic organic chemistry, Smith is the Rhodes-Thompson Professor of Chemistry at the University of Pennsylvania and served as chairman of its Chemistry Department from 1992 to 1996. He also is a member of two of its interdisciplinary institutes: the Laboratory for Research on the Structure of Matter and the Monell Chemical Senses Center.

"*Organic Letters* will offer rapid communication of original, concise, and timely reports of significant research," said Smith. "The speed of access offered by the Society's innovative web publishing features will make this journal an essential tool in organic chemistry."

Smith named six associate editors to serve on the journal. They are: Peter Beak and Scott Denmark, both of the University of Illinois, Urbana-Champaign; C. Dale Poulter and Cynthia J. Burrows, both of the University of Utah; Daniel H. Rich, University of Wisconsin, Madison; and Jeffrey D. Winkler, University of Pennsylvania.

SPARC Invites Expanded Membership

Membership in SPARC is now open beyond the ranks of ARL. A newly released SPARC membership plan invites international support from academic and research institutions that share an interest in creating a more diverse marketplace for scholarly communication by encouraging the development of high-quality, economical journals.

"Founding Member" status is available to qualifying members that join by December 31, 1998. Several membership categories allow individual institutions to provide support ranging from $1,500 to $5,000 annually. Consortium memberships also are available, utilizing a dues structure based on the aggregate library materials spending of participating libraries.

SPARC is a new but already formidable coalition of libraries that aims to create a more competitive scholarly communication marketplace. Its initial focus is on science journals, where the problems of high and escalating prices are most serious. Created as an initiative of **ARL**, SPARC membership has grown more than 50% since June 1998 to include 122 member libraries and library consortia. In addition to SCONUL and the Conference of Directors of Research Libraries (above), SPARC affiliate organizations include the **Association of College & Research Libraries** and the **Canadian Association of Research Libraries**.

The SPARC membership plan and related documents can be viewed at the SPARC web page <http://www.arl.org/sparc/index.html>.

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More information on the organizations and products described above may be found at the following URLs on the World Wide Web:

- Conference of Directors of Research Libraries: <http://www.dlh.dk/dpb/fc/fc_eng.html>
- Royal Society of Chemistry: <http://www.rsc.org/>
  PhysChemComm: <http://www.rsc.org/physcc/>
- SCONUL: <http://www.sconul.ac.uk/>
- ACS Publications: <http://pubs.acs.org/>
  Organic Letters: <http://pubs.acs.org/journals/orlef7/index.html>
- *Evolutionary Ecology Research*: <http://www.evolutionary-ecology.com/>
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OFFICE OF SCHOLARLY COMMUNICATION

Mary M. Case, Director

ELECTRONIC THESES AND DISSERTATIONS: THE INEVITABLE FUTURE

Issue #7 of Transforming Libraries[1] *summarizes the current state of electronic theses and dissertations and reports on current developments in 13 institutions. The following is a excerpt of the introduction to this issue that was written by George J. Soete with technical assistance from Gail McMillan of Virginia Tech.*

Perhaps no technological development in recent years has so energized the academic community as electronic theses and dissertations (ETDs). Though only one university is currently in full production mode, with a second close behind, many others are running pilot projects or discussing the issues on their campuses. Some in academia are very strong advocates, pointing to clear benefits for all concerned, but others are not so sure, suggesting that ETDs may compromise the publication potential of student work.

ETDs: The Current Situation

ETDs are digitally produced, archived, and accessed theses and dissertations. Typically, students produce their work using standard word processing systems, then convert them into PDF or SGML formats. They may insert multimedia files: still pictures, maps, or video and audio clips. Students have a menu of choices for distribution; typically these choices include 1) unrestricted distribution via the Web; 2) distribution restricted to the university community; and 3) no distribution allowed for a certain period.

One institution, Virginia Tech, is in full production mode with more than 1,100 ETDs approved so far. West Virginia University is the second institution to make electronic submission of theses and dissertations mandatory, effective August 1998. Several other institutions are in pilot mode, and many others are in the process of orienting their campus communities and/or investigating and discussing ETDs.

Virginia Tech is the clear leader in the field; they are viewed by many as setting standards for ETD programs. With grant support, they are providing training, software, and other kinds of assistance to anyone who asks for it. The Networked Digital Library of Theses and Dissertations (NDLTD), based at Virginia Tech, is an umbrella organization of 35 institutions (as of July 1998) that are at various stages in the development of ETD programs. NDLTD acts as a clearinghouse for information about ETDs, holds discussions about ETDs with publishers, and promotes inquiry into ETD issues.

Benefits of ETDs

The benefits of ETDs are many. In general, they correlate with the benefits of most electronic services and resources:

- Accessibility from anywhere at any time.
- Quick availability after submission (paper dissertations may take up to a year to be processed).
- Searchability, indexing.
- Inclusion of multimedia.
- Potential savings in storage space, circulation, interlibrary loan, and processing costs.
- Simplification of cataloging processes.
- Education of students in use of electronic technologies in scholarly inquiry and publication.

Key Issues

While the benefits of ETDs are vividly apparent, movement toward widespread adoption of fully developed ETD programs has been relatively slow. Libraries are grappling with several issues. As usual, the purely technical issues appear to be solvable, while the human issues look somewhat more daunting.

Readiness. The issue of readiness encompasses a great deal. For most, it means, "How ready is the institution to embrace ETDs such that electronic submission should be a requirement of the process?" Most institutions are answering, "Not yet ready!" In general, though it is not invariably true, faculty and students in the sciences are more enthusiastic about ETDs than their colleagues in the social sciences and humanities. Humanists and social scientists tend to be more concerned about loss of potential publication of their work and plagiarism. In some cases, student skills are not sufficient or the technical infrastructure is considered inadequate.

Publication Potential. One of the thorniest issues for many students is the possibility that their chances of getting their work accepted by a publisher is compromised by the electronic availability of their work. Several publishers have declared flatly that ETDs are considered previous publications and will not be accepted. But others (Elsevier, for example) have declared no blanket prohibition against ETDs, suggesting that individual editors would factor ETD availability in their publication decisions. It is likely that publishers will be less skeptical once there is wider use of ETDs and more data on trends available.

Intellectual Property. As with any electronic publication, ETDs present property rights issues, even though ownership by the student and sponsorship by the university may seem to simplify the problems. Some are concerned that wider availability on the Web will lead to plagiarism and irresponsible redistribution of their work. Some faculty have expressed concern that their own work, which is sometimes the framework for the student's work, will be prematurely released and not appropriately credited.

Orientation and Training. Institutions running ETD programs, whether in pilot or routine mode, have discovered that orientation and training need a great deal of attention and may represent significant additional cost. Students need to be trained in systems such as PDF. Sometimes they even need basic training in word processing. The decision concerning who will provide training for students is a key one for planners. Peer trainers have been found by some institutions to be very effective. In general, interviewees

spoke of greater success with informal training methods, and spoke of the importance of having staff available to assist students when they needed special help.

Standards. Choice of formats can be troublesome, especially when students are creating their work in everything from state-of-the-art systems to antique word processing systems. Planners need to decide what standards they will set for electronic submission and how much responsibility they will place on the student for meeting standards. Standards determine how computer labs will be equipped, what systems trainers have to master, and how difficult it will be to manage files.

Costs. Opinions about costs are very much divided. Some feel that ETDs, though a tremendous improvement in service, will not result in appreciable overall cost-savings; others feel that considerable savings will result. Still others point to significant start-up costs. It seems undeniable that there will be savings in some areas for those institutions that migrate to required electronic submission; for libraries, such savings should be found in storage, processing, and interlibrary lending, as well as other areas. And yet, until the top of the learning curve is reached, student training might represent significant additional costs.

Archiving, Preservation. Archiving and preservation are major issues for most interviewees. Some institutions are moving forward, trusting that technological solutions will be found, while others remain cautious and are not committing to archiving. Many others are committed to running parallel paper/microform systems or to relying on UMI as an archival holding.

Restrictions. Many institutions will provide students with a menu of distribution choices, including the option of restricting access to the campus or denying access altogether. Yet some have begun to question restrictions and to work toward refinements. A critical question for state institutions is whether they can, by law, keep the citizens of their states from accessing the products of university research.

ETDs: The Future

Virtually all interviewees felt that electronic theses and dissertations are an inevitable development. Though many institutions are taking it slow, their ultimate goal, clearly, is required submission of ETDs and, ultimately, a paperless thesis and dissertation program.

Much like the larger world of electronic publication, ETDs represent major changes and major challenges to established ways of doing things. In this case, the benefits seem so heavily to outweigh any negative aspects that the widespread implementation of ETD programs does indeed seem inevitable.

[1] *Issues and Innovations in Electronic Theses and Dissertations*, Transforming Libraries #7 (also issued as SPEC Kit 236), Washington, DC: ARL, October 1998. See <http://www.arl.org/transform/index.html>.

Spring 1999 Conferences

ARL/SLA Licensing Videoconference

March 4, 1999

"De-Mystifying the Licensing of Electronic Resources," a videoconference co-sponsored by ARL and the Special Libraries Association and funded in part by Lexis-Nexis, will be held on March 4, 1999, from 1:00–4:00 p.m. EST. The videoconference will cover the basic elements of a license agreement; the legal foundations of a license, including copyright and other relevant areas of the law; and user, access, and legal terms. Panelists include Molly H. Sherden, Attorney with Peabody & Arnold, Boston; Pamela Clark, Vice President of American International Group, London and New York; and Trisha Davis, Head of Continuation Acquisition Division, Ohio State University Libraries.

Site licenses for the live satellite broadcast are available to ARL libraries for $350 (before February 9). There is no limit to the number of participants at a site. This is an excellent opportunity to provide the basics of licensing for those library staff and university personnel who may not need or have the time for the full two-day workshop offered by ARL. Details are available on the ARL website <http://www.arl.org/scomm/licensing/videoconf.html>.

New Challenges for Scholarly Communication in the Digital Era: Changing Roles and Expectations in the Academic Community

March 26-27, 1999

A conference sponsored by the American Association of University Professors, American Council of Learned Societies, Association of American University Presses Association of Research Libraries, and the Coalition for Networked Information will be held on March 26-27, 1999, in the Sheraton City Center Hotel, Washington, DC. Building on the success of last year's conference on the scholarly monograph, this conference will look at a number of key issues confronting scholarly communication in the digital age. Topics include: Getting Ahead in the Digital World, Distance Education; What Does it Mean to Publish?; Economics of Scholarly Publishing; and Preservation and Access. Detailed program and registration information is available at <http://www.arl.org/scomm/conf.html>.

OFFICE OF LEADERSHIP & MANAGEMENT SERVICES

Kathryn J. Deiss, OLMS Program Manager

STEAL A BASE OR STAY SAFE? TAKING RISKS TO GROW

Progress always involves risk; you can't steal second base and keep your foot on first.
—Frederick Wilcox[1]

Continued success in any organization, including libraries, depends on its individuals to learn at least as fast as the rate of organizational change. This learning often involves taking risks: risks in trying new behaviors, risks in abandoning what we do well to explore what we know less well, and risks in developing new models to deliver on our missions, just to name a few areas. In order for this to take place, however, we must first overcome the barriers to establishing a risk-taking environment.

Easier Said Than Done

As consultants, we frequently hear the hope that people will take more risks to help the organization break through to new concepts, solutions, and paradigms. However, we also hear the individual and collective voice of fear saying that risk is too dangerous—personally and organizationally. Trying something new is like stepping out to steal a base: if we succeed, the success is absorbed into our daily practice, routinized, and forgotten, but if we are unsuccessful, the failure is remembered and carried over into assumptions about our abilities, our leaders, and our safety. A common fear is of retribution for failure. The concept of "permission to fail" is a phrase incapable of being meaningful in the practices we exhibit. After all, do we have examples in our everyday work worlds where we applaud or even permit failure resultant from risk-taking? Or is this a rarity in our organizational cultures?

The main question to ask, then, is: Why is risk-taking so difficult and what can organizations do to address that issue?

The "Real" Problem with Risk-Taking

While fear of retribution if a risk turns to failure is one inhibitor of risk-taking, it is not the only concern that is voiced. One of most often-heard and cogent concerns is of the possible failure to provide the expected performance. People want to deliver work in the way that has been comfortable, reasonably effective, and rewarded. Although those who support the concepts behind increased risk-taking indicate that a higher degree of effectiveness is likely to be the direct result of a higher degree of risk-taking, it is not before first passing through a forbidding level of diminished effectiveness, commonly known as the "learning curve." There is a definite sense that taking risks can lead to feeling, seeming, or even being "less" competent than one is used to being—in fact, one might even go so far as to say we are asking people to be "consciously incompetent" when we ask them to take risks. Everything in their experience tells them that risk-taking behaviors generally mean being in a state of less than total control—of being in a state of exploration, puzzlement, and discovery, an uncomfortable or even unacceptable state for many people in the workplace.

These worries point to the observation that fear and reticence to risk are consequences of the fact that we have, apparently, only one arena in which to take risks: our "performance arena," where we actually do the work we are there to do. We feel that what we are engaged in is entirely too important to us to chance failure or the appearance of failure. Obviously, we don't want to risk not being able to perform our work—for libraries, the organization and delivery of information services—work we are rewarded for performing in a consistent and predictable manner. Therefore, we need to create an arena that will safely allow for risk-taking without sacrificing job performance when learning to take those risks.

Where To Learn?

Creating Practice Arenas

Obviously, one can learn even in performing tasks as one has always performed them. However, in an area of less competence, risk is required to beget learning and new practices. What is needed to encourage more risk-taking? Where can this activity best take place? If our performance arena calls on us to deliver our work with a fairly consistent and high degree of quality, where will we find the "practice arena" in which to learn the new behaviors associated with risk-taking? One answer is to turn to areas of our work that aren't expressly connected to our delivery of service. In the library environment, such areas may include data gathering, performance evaluation, or designing responses to our user communities. I would suggest that these are areas in which we could create "practice arenas" to truly encourage greater creativity and risk-taking without invoking those concerns that cause reticence to risk.

Where We Feel Comfortable

There are a finite number of areas where risk can take place: the physical, the intellectual, the financial, and the relationship areas. In at least three of these areas (the latter three) we are being called upon to risk in order to meet and respond to the changing environment. Libraries, faced with a rapidly changing and growing intellectual environment, are clearly eager for new ideas, concepts, models, and theories with which to fashion responses to this environment. In the financial area, we might benefit from risk and innovation in the ways we allocate funds, seek new funding, and assess

fiscal performance. And the relationship area could benefit from true risk-taking that may result in new communication behaviors, facilitative and shared leadership, the ability to confront organizational defensive mechanisms, and the building of a new sense of community.

The Leaders' Role

Finally, leadership support is necessary in order to create an environment that encourages risk-taking. To do so, leaders at all levels of the organization need to reflect on their own risk-taking and facilitative behaviors; only through self-understanding can one clearly explain the desired behaviors and design structures and systems that support those behaviors. However, modeling risk-taking is not enough—in fact, this can create an "organizational nervousness" whereby others see no safe and stable place. Therefore, leaders' risk-taking needs to be accompanied by genuine support of others' risks, both psychologically and in terms of rewards.

Conclusion

Disorder, challenge to espoused tradition and practice, and play are natural elements of the risk-taking process. As such they need to be encouraged and, indeed, protected in order to make risk-taking a more natural behavior. David Campbell, Smith Richardson Senior Fellow of the Center for Creative Leadership, identifies a number of organizational blocks to creativity.[2] Two of these, a "preoccupation with order and tradition" and a "reluctance to play," seem to be especially difficult for us in libraries. Creating "practice arenas" where freedom to play with ideas and concepts exists without high risk to immediate performance might help groups and individuals "learn" to risk as a more natural behavior. But playfulness is only one part of risk; commitment to risk is just as important. As Daniel Goleman, author of *The Creative Spirit*, has written, "Risk, like beauty, is in the eye of the beholder... [something that] may seem risky or dangerous from the outside can seem entirely different to the person in its midst. The hidden variable is commitment."[3]

To gain commitment to and expand our capacity for risk-taking, our organizations must be ingenious in creating reward systems that encourage the behaviors we want to develop. We must have credible leaders who themselves model and support this behavior, and we must form practice or learning arenas that allow people to develop confidence in themselves and in the benefits of temporary puzzlement and discomfort. By doing so, we will create an atmosphere of safe change that allows for innovation, better job results and satisfaction, and, ultimately, a more successful organization.

The Office of Leadership and Management Services is offering two programs that will help libraries to develop "can do" cultures: the Edgework Institute: Stimulating Innovation in Library and Information Services, in November 1999; and the four-part Institute on Organizational Learning for Library Performance, which will open in October 1999.

[1] Quoted in Sharon Gilchrest O'Neill's *Lûr'næmg: 147 Inspiring Thoughts for Learning on the Job* (Berkeley, CA: Ten Speed Press, 1993).

[2] David P. Campbell, *Take the Road to Creativity and Get Off Your Dead End* (Greensboro, NC: Center for Creative Leadership, 1985).

[3] Daniel Goleman, *The Creative Spirit* (New York: Dutton, 1992).

New SPEC Kits From the OLMS Information Services Program

by Patricia Brennan, ARL Publications Officer

To order copies of any of these titles, contact the ARL Publications department at <pubs@arl.org>.

The Role of ARL Libraries in Extension/Outreach
SPEC Kit 233, August 1998
Compiled by Claudine Jenda and Tamera Lee, Auburn University

Issues and Innovations in Distance Learning
SPEC Kit 234, TL 6, September 1998
Compiled by William G. Jones, University of Illinois at Chicago; Joan K. Lippincott, CNI, Editorial Advisor

Collaborative Collections Management Programs in ARL Libraries
SPEC Kit 235, September 1998
Compiled by George Soete, ARL/OLMS

Issues and Innovations in Electronic Theses and Dissertations
SPEC Kit 236, TL 7, October 1998
Compiled by George Soete, ARL/OLMS; Gail McMillan, Virginia Tech, Editorial Advisor

Managing Food and Drink in ARL Libraries
SPEC Kit 237, September 1998
Compiled by George Soete, ARL/OLMS

SPEC Kits: ISSN 0160-3582, $40 ($25 ARL members). SPEC Flyers summarizing SPEC Kits are available at <http://www.arl.org/spec/complete.html>.

STATISTICS AND MEASUREMENT

Julia Blixrud, Senior Program Officer

PRESERVATION EXPENDITURES LEVEL; MICROFILMING, STAFFING DECLINE

The *ARL Preservation Statistics* provides annual statistical information on the current level of preservation efforts in research libraries and on the key organizational, functional, and fiscal components that characterize preservation programs. The 1996-97 survey was revised to streamline current data collection activities and to add two optional questions regarding digitizing: "number of bound volumes/pamphlets digitized," and "number of single, unbound sheets (manuscripts, maps, photographs) digitized." Although digitizing for preservation purposes was defined broadly in the instructions, only 19 libraries responded to the optional questions on bound volumes digitized. The reports varied widely from one bound volume digitized (two institutions) to 335,191 items reported digitized by one institution.

Preservation expenditures have been level since 1993. The total $80,772,236 reported for 115 reporting member libraries reflects a modest increase of about $3,000,000 for 1996-97. Total preservation staff sharply declined to 1,742 FTEs in 1996-97 from 1,879 in 1995-96, falling back to the staffing levels reported in 1989-90. Level 1 conservation treatment has increased and Level 2 treatment has declined, but Level 3 treatment has remained at approximately the same level as last year.

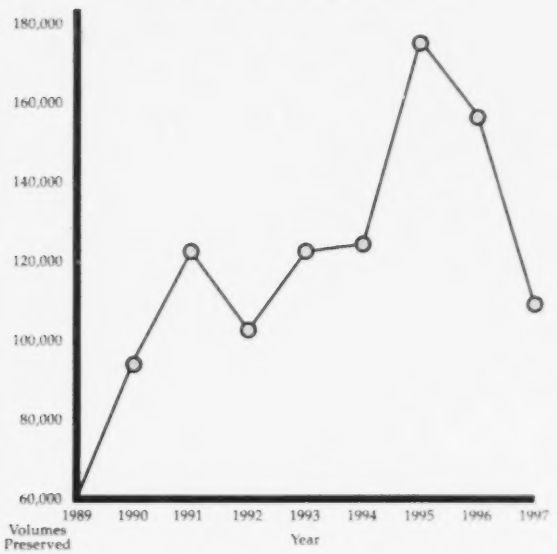
Microfilming activity, measured in volumes, has declined for the second year in a row. Availability of external funds continues to play a critical role in that preservation activity. In 1988, the National Endowment for the Humanities (NEH) began a multi-year, expanded cooperative preservation microfilming program. ARL libraries participated extensively in that program, and data show that cuts in the NEH budget negatively affected the availability of external funding for preservation activities by research libraries. External funding has been reduced constantly from a high of $11,090,547 in 1992-93 to a low of $7,364,841 in 1996-97. University libraries in the aggregate reported that special grants from external sources accounted for about 9% of the total preservation expenditures, two percentage points lower than last year. Grant funds were expended predominantly on preservation microfilming projects. The accompanying chart shows that ARL member libraries preserved 109,526 volumes on microfilm in 1996-97, a 29% decline in volumes since last year.

The financial support for preservation activities in ARL university libraries shows a substantial range from approximately $116,354 to $3.5 million during fiscal year 1996-97. As a corollary, ARL university libraries spent from as little as 1% to as much as 7% of total library budgets for preservation.

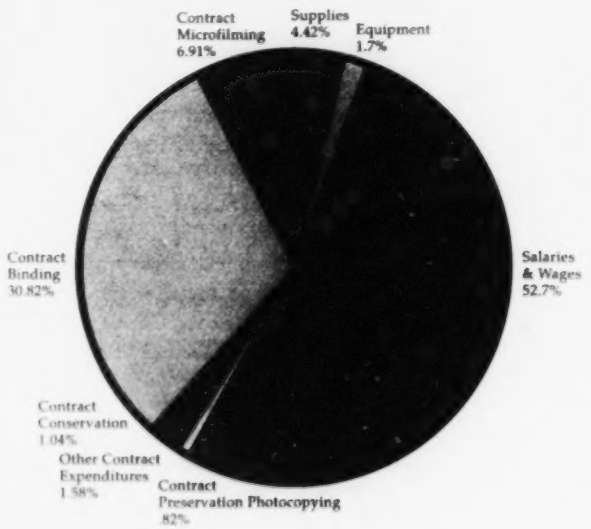
The chart below displays the allocation of preservation expenditures based on data from all reporting ARL libraries. Local needs and capabilities will determine the exact allocation of budgetary resources to various activities, but, as in past years, the largest category is salaries and wages, followed by binding expenditures.

ARL Preservation Statistics 1996-97 presents data from 115 U.S. and Canadian research libraries. Copies are available for $35 to member libraries and $65 to nonmembers (plus $6 shipping and handling per publication). Please contact ARL Publications, Department #0692, Washington, DC 20073-0692; (202) 296-2296; or email <pubs@arl.org>.

VOLUMES FOR PRESERVATION MICROFILM MASTERS



PRESERVATION EXPENDITURES 1996–97



ARL Activities

Lee Anne George, Program Planning Officer

George Washington University Joins ARL

At its Membership Meeting held in October, the membership of ARL voted to invite The George Washington University Libraries to join as the 122nd member. Located in Washington, DC, the University is classified as a Carnegie Research University II institution. Jack A. Siggins, University Librarian, accepted the invitation.

The University Libraries serve as a resource in support of the research and instruction conducted by the approximately 1,175 faculty and 16,000 students. The Libraries include a distinctive Washingtoniana collection, a collection of post-Cold War materials from the former Soviet Union, Eastern Europe, and East Asia, as well as an important Judaica collection donated by the Kiev family.

More information about The George Washington University Libraries may be found at: <http://www.gwu.edu/~gelman/>.

ARL Confronts Challenges of the Digital Era

The 133rd Membership Meeting of ARL, held October 14–16, 1998 in Washington, DC, was convened by ARL President James Neal, Johns Hopkins University, to engage the theme of Confronting the Challenges of the Digital Era. University of Maryland President Dan Mote, Jr. opened the program with a keynote address on strategies for raising funds for the digital library. The program included an economist's assessment of the impact of journal publisher mergers on pricing practices, a panel of experts looking at staffing issues in the digital era, and perspectives from provosts David Shulenburger (University of Kansas) and Charles Phelps (University of Rochester). Papers presented at the October meeting are made available electronically on ARL's web server as they are received, at <http://www.arl.org/arl/proceedings/133/index.html>.

Elections

At the ARL Business Meeting, membership elected three new representatives to the ARL Board of Directors: Meredith Butler (SUNY at Albany), Joseph Hewitt (University of North Carolina), and Carolynne Presser (University of Manitoba). Each will serve a three-year term on the Board, October 1998 to October 2001.

ARL President Jim Neal also acknowledged and saluted the contributions of Board members whose terms expired this October: Bill Crowe (University of Kansas), Carole Moore (University of Toronto), and Gloria Werner (UCLA).

Kenneth Frazier (University of Wisconsin) was elected Vice President and President-Elect of ARL by the ARL Board of Directors. He serves as Vice President for a year before becoming President in October 1999.

At the conclusion of the Business Meeting, Mr. Neal handed the gavel to Betty Bengtson (University of Washington), who began her term as ARL President.

Honors

Kendon L. Stubbs: On October 30, Kendon L. Stubbs became the 45th recipient of the Thomas Jefferson Award, the University of Virginia's highest award. The award honors an individual who exemplifies in character, work, and influence the principles and ideals of the University's founder. Stubbs was recognized for his innovations in making the University Library's vast resources more accessible to the University and scholarly communities via the Internet.

Transitions

UC–Berkeley: Gerald R. Lowell was appointed University Librarian, effective December 1, 1998. He was previously University Librarian and Associate Vice Chancellor-Academic Information Technology at UC–San Diego.

UC–San Diego: Phyllis S. Mirsky, previously Deputy University Librarian, was appointed Interim University Librarian, effective November 7.

Michigan: William A. Gosling was named Director of the Libraries. Serving as Michigan's Interim Director since 1997, he came to the University in 1986 as Assistant Director for Technical Services and Library Systems.

Tulane: Philip E. Leinbach announced his resignation as University Librarian, effective July 1, 1999.

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International Federation of Library Associations: Leo Voogt has announced his resignation as IFLA Secretary General to accept the position of Executive Director of the Netherlands Royal Association for the Book Trade (KVB).

ICANN: Mike Roberts was named Interim President of The Internet Corporation for Assigned Names and Numbers, the new non-profit group that is likely to take over the Internet's address registration system. He was formerly Vice President of EDUCOM.

ARL Staff Transitions

Patricia Brennan announced her resignation as ARL Program Officer for Publications to accept the position of Publications Manager in the Harvard University Library, effective January 25.

ARL/AAU Global Resources Program Transitions

Roger Brisson, Digital Access Librarian and Selector, German Language & Literature at Pennsylvania State University's Pattee Library, assumed responsibility as the Coordinator, AAU/ARL German Resources Project, effective July 1, 1998.

Mary E. Jackson, ARL Senior Program Officer for Access Services at ARL, was appointed Director of the National Coordinating Committee (NCC) on Japanese Library Resources. Ms. Jackson will also assume responsibility for coordinating the AAU/ARL/NCC Japanese Journal Access Project.

Eudora Loh, Latin American Bibliographer at UCLA, has taken over the leadership of the Advisory Committee of the AAU/ARL Latin Americanist Research Resources Project.
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ARL

ARL: A Bimonthly Newsletter of Research Library Issues and Actions (US ISSN 1050-6098) is published six times a year by the Association of Research Libraries, 21 Dupont Circle, Washington, DC 20036. 202-296-2296 FAX 202-872-0884 <http://www.arl.org/newsltr/newsltr.html>
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Executive Director: Duane E. Webster
Editor: G. Jaia Barrett, Deputy Executive Director
Co-editor: Lee Anne George, Program Planning Officer
Copy Manager: Karen A. Wetzel
Designer: Kevin Osborn, Research & Design, Ltd., Arlington, VA
Subscriptions: Members—$25 per year for additional subscription, Nonmembers—$50 per year.

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ARL Calendar 1999

January 7–8	From Data to Action: An ARL Workshop on Strategies to Redesign ILL/DD Services *Chicago, IL*
January 29	OCLC/ARL Resource Sharing Symposium *Philadelphia, PA*
February 11–12	**ARL Board Meeting** *Washington, DC*
March 4	De-Mystifying the Licensing of Electronic Resources ARL/SLA Videoconference 1:00–4:00 p.m. EST
March 10–12	Library Management Skills Institute I: The Manager *Denver, CO*
March 26–27	New Challenges for Scholarly Communication in the Digital Era: Changing Roles and Expectations in the Academic Community *Washington, DC*
May 4–6	Facilitation Skills Institute *Seattle, WA*
May 11–14	**ARL Board and Membership Meeting** *Kansas City, MO*
May 19–21	Training Skills Institute: Managing the Learning Process *San Diego, CA*
June 3–4	Project Management Institute: Getting Things Done or Getting the Outcomes You Want *Evanston, IL*
July 26–27	**ARL Board Meeting** *Washington, DC*
October 7–8	Leading Change Institute *San Antonio, TX*
October 12–15	**ARL Board and Membership Meeting** *Washington, DC*
October 26–29	Library Management Skills Institute II: The Management Process *Evanston, IL*
November 3–5	Assistant/Associate Librarian Institute *Charleston, SC*
November 10–12	Edgework Institute: Stimulating Innovation in Libraries and Information Services *Washington, DC*
November 17–19	Library Management Skills Institute I: The Manager *Atlanta, GA*